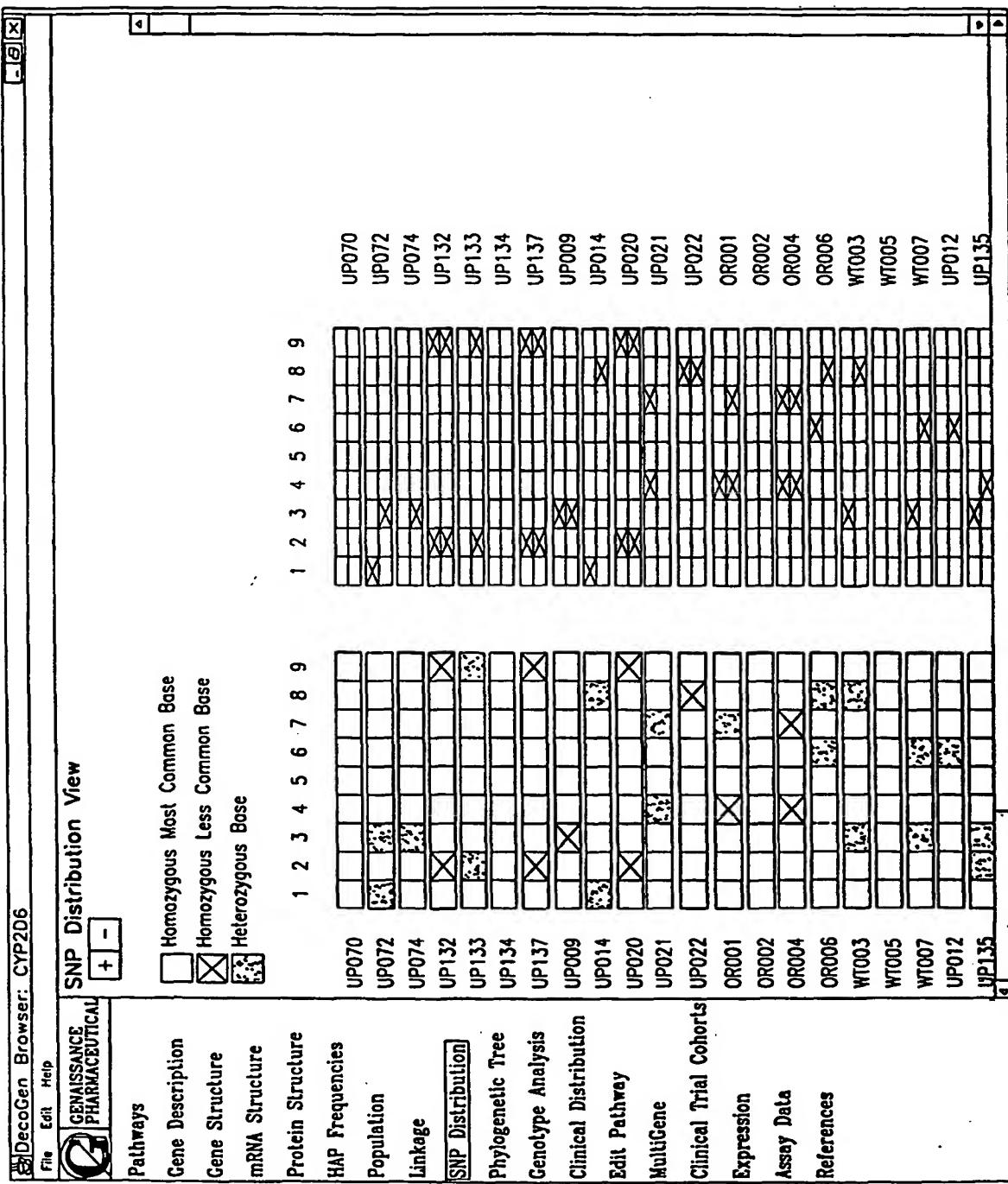


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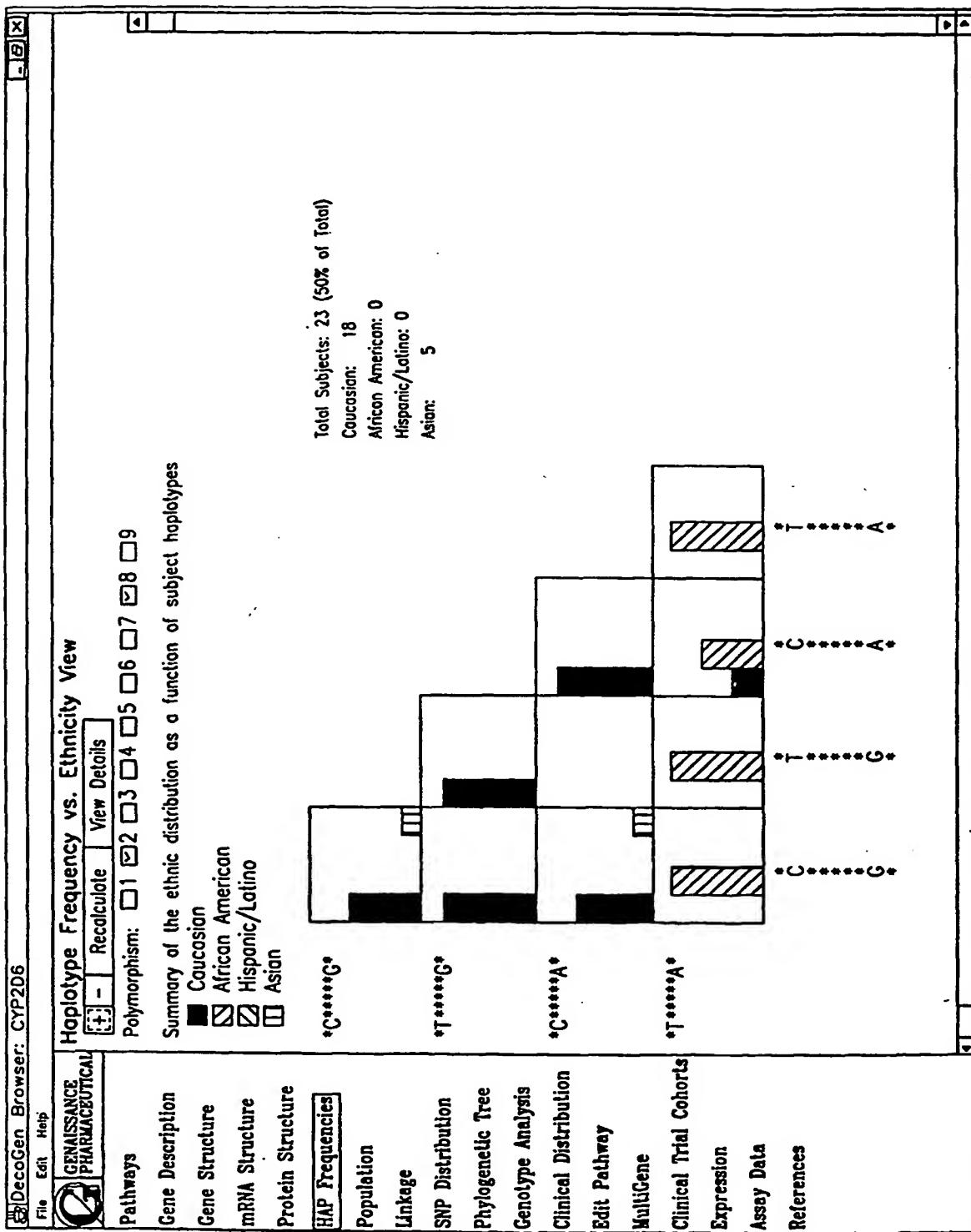
## FIG. 9



SUBSTITUTE SHEET (RULE 26)

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FIG. 10



SUBSTITUTE SHEET (RULE 26)

FIG. II

DecoGen Browser: CYP2D6

File Edit Help

GENEASSANCE PHARMACEUTICAL

Pathways Gene Description Gene Structure mRNA Structure Protein Structure HAP Frequencies

Haplotype Frequency vs. Ethnicity View

+ - Recalculate View Summary

Polymorphism:  1  2  3  4  5  6  7  8  9

Details of the ethnic distribution as a function of subject haplotypes

3 Columns are given for each Ethnogeographic group:  
 Total number sampled with HAP pair  
 Fraction of the ethnogeographic group with that HAP pair  
 Fraction expected under Hardy-Weinberg equilibrium for that HAP pair

HAP 1	HAP 2	N	%Pop.		Caucasian	African American	Hispanic/Latino	Asian
			Pop.	Caucasian				
*C*****G*	*C*****G*	23	50%	18.56.37	37.9%	0	0.0%	0.0%
*T*****G*	*C*****G*	2	4%	2	6.3%	0	0.0%	2.4%
*T*****G*	*T*****G*	4	8%	4	12.5%	2.4%	0	0.0%
*C*****G*	*C*****G*	5	10%	4	12.5%	25.2%	0	0.0%
*C*****A*	*C*****A*	3	6%	3	9.4%	4.2%	0	0.0%
*C*****A*	*C*****A*	1	2%	0	0.0%	3.2%	1	12.5%
*C*****G*	*T*****G*	2	4%	0	0.0%	0.8%	2	25.0%
*C*****A*	*C*****A*	3	6%	1	3.1%	1.1%	2	25.0%
*T*****A*	*T*****A*	3	6%	0	0.0%	0.1%	3	37.5%
					37.9%	0	0.0%	0.0%

Population Linkage SNP Distribution Phylogenetic Tree Genotype Analysis Clinical Distribution

Edit Pathway MultiGene Clinical Trial Cohorts Expression Assay Data References

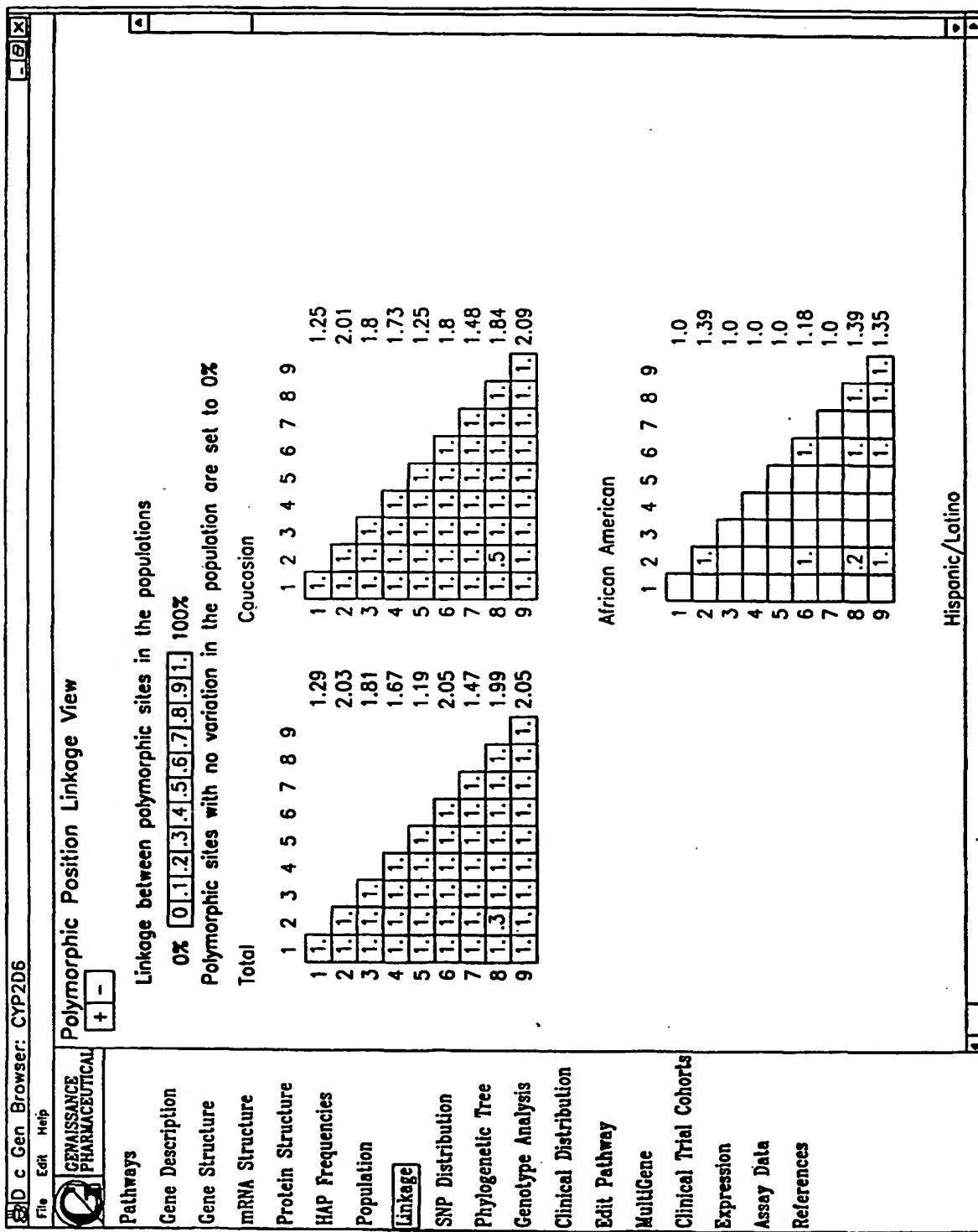
10/019342

WO 01/01218

PCT/US00/17540

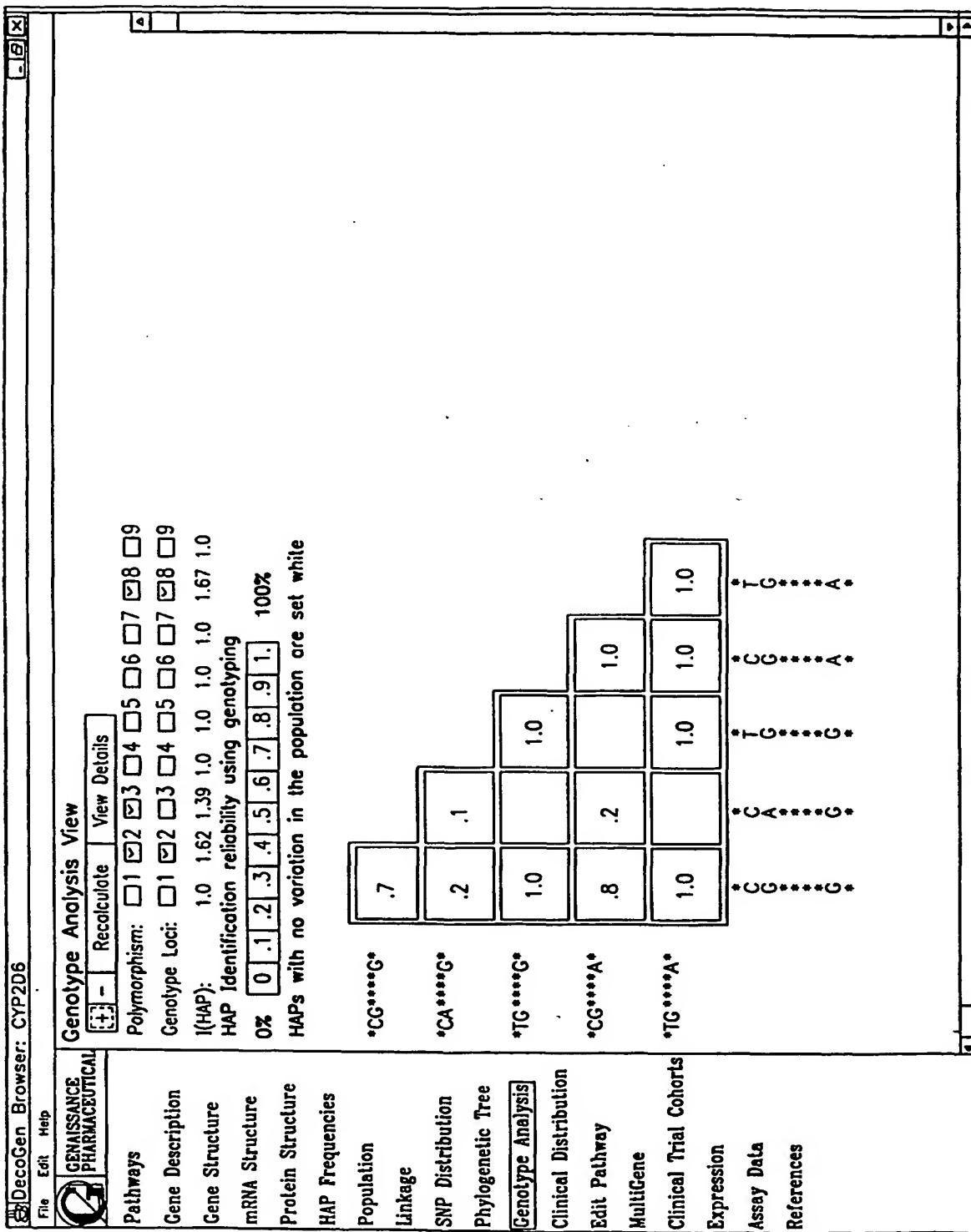
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FIG. 12



SUBSTITUTE SHEET (RULE 26)

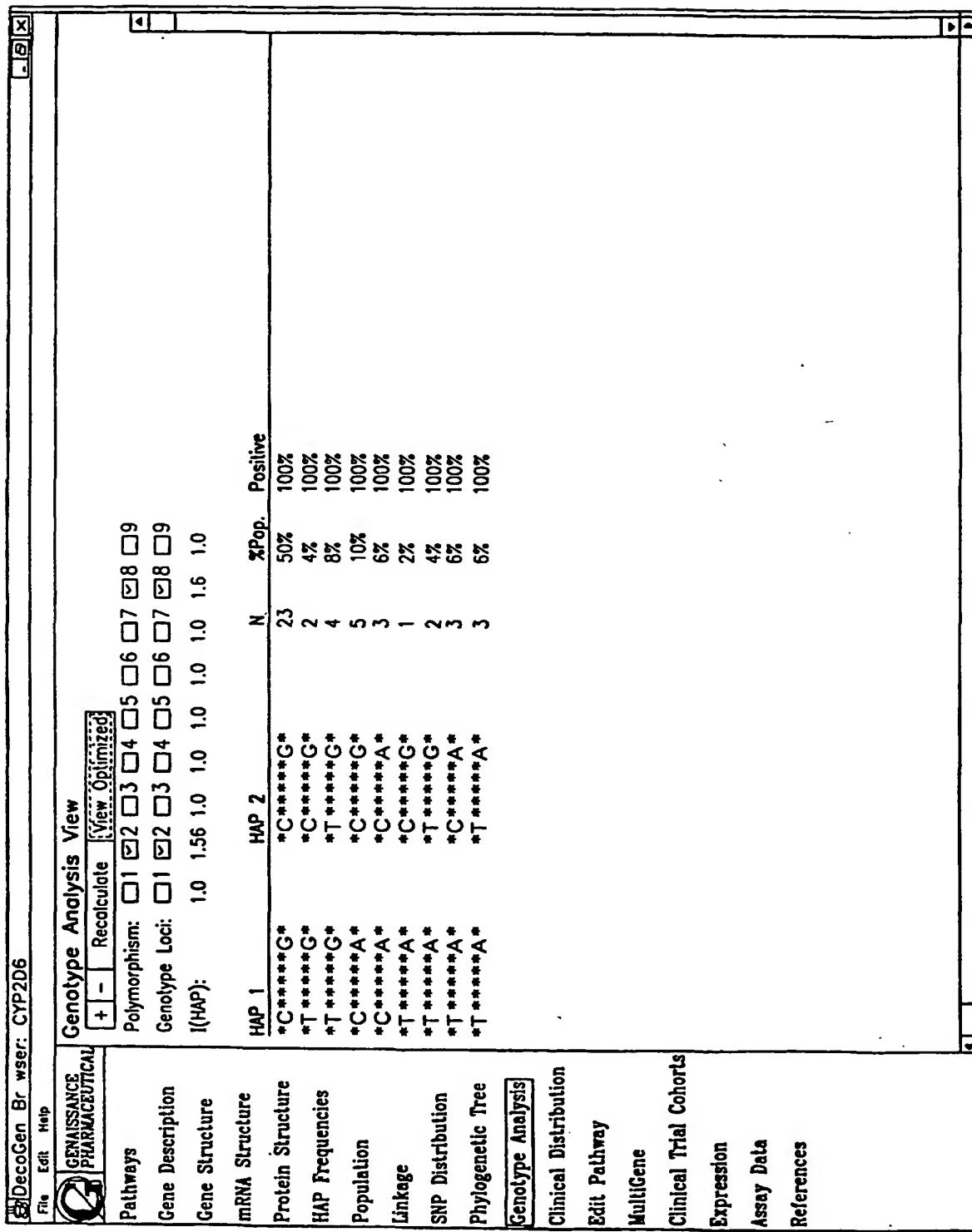
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## SUBSTITUTE SHEET (RULE 26)

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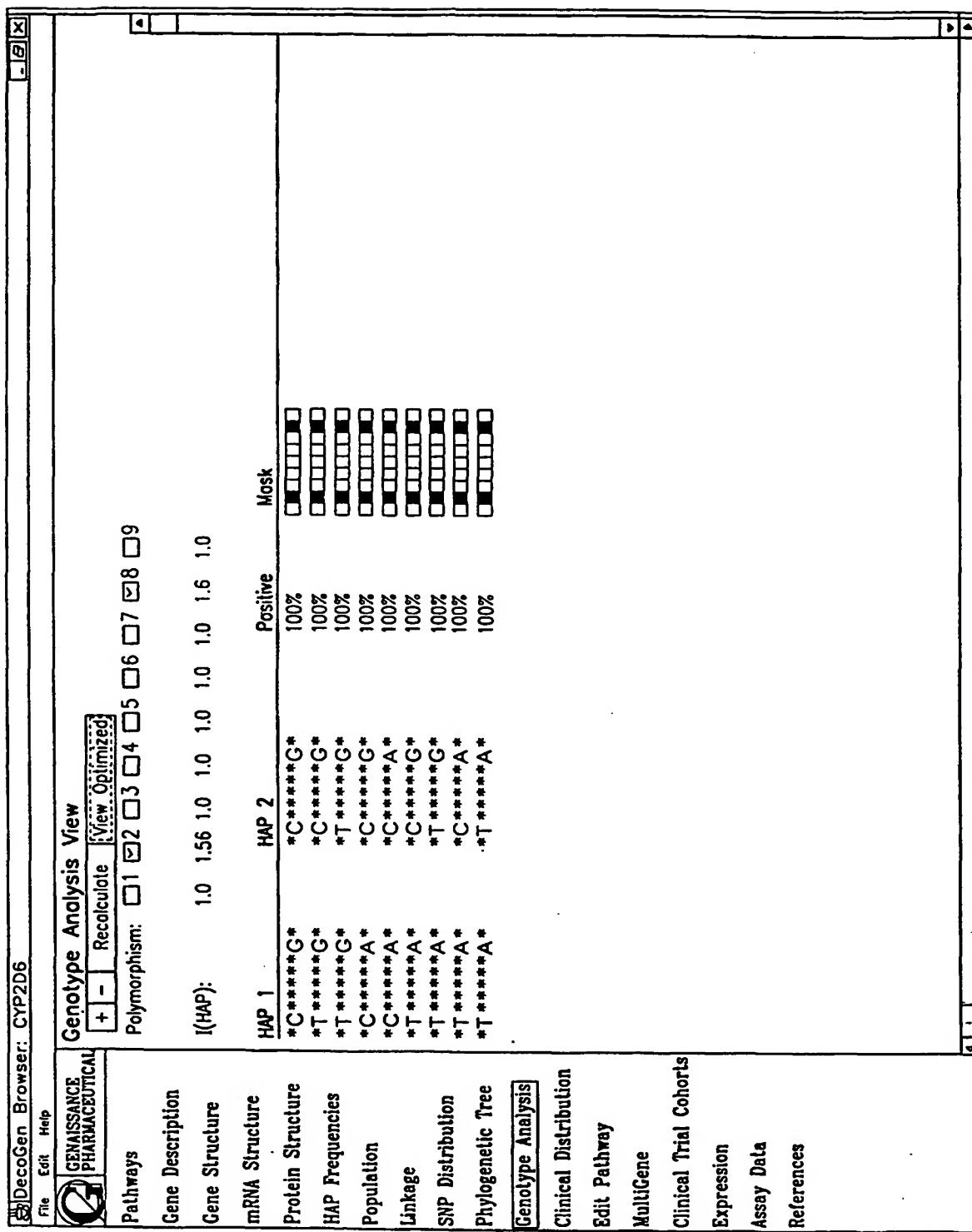
FIG. 14



SUBSTITUTE SHEET (RULE 26)

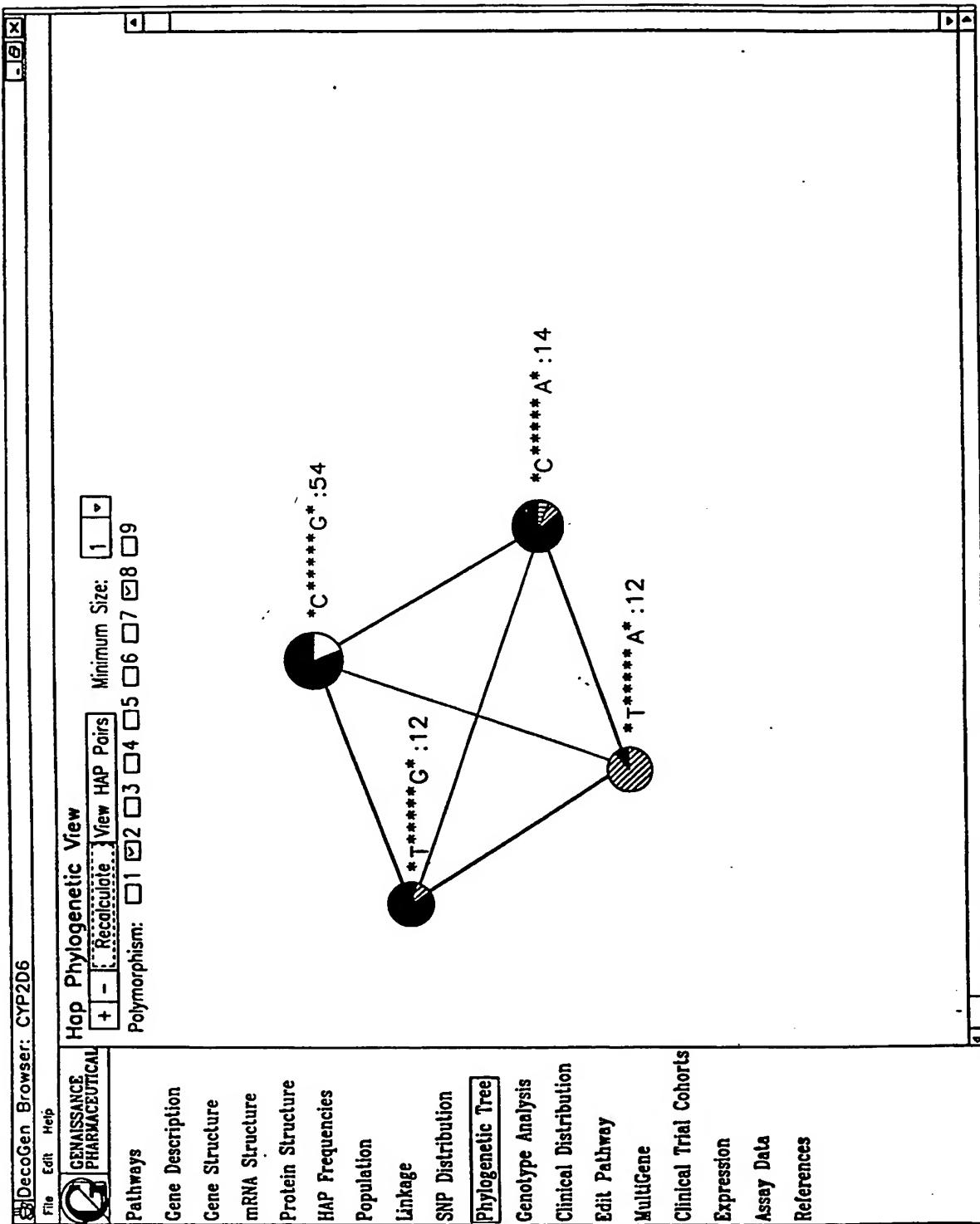
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## **SUBSTITUTE SHEET (RULE 26)**

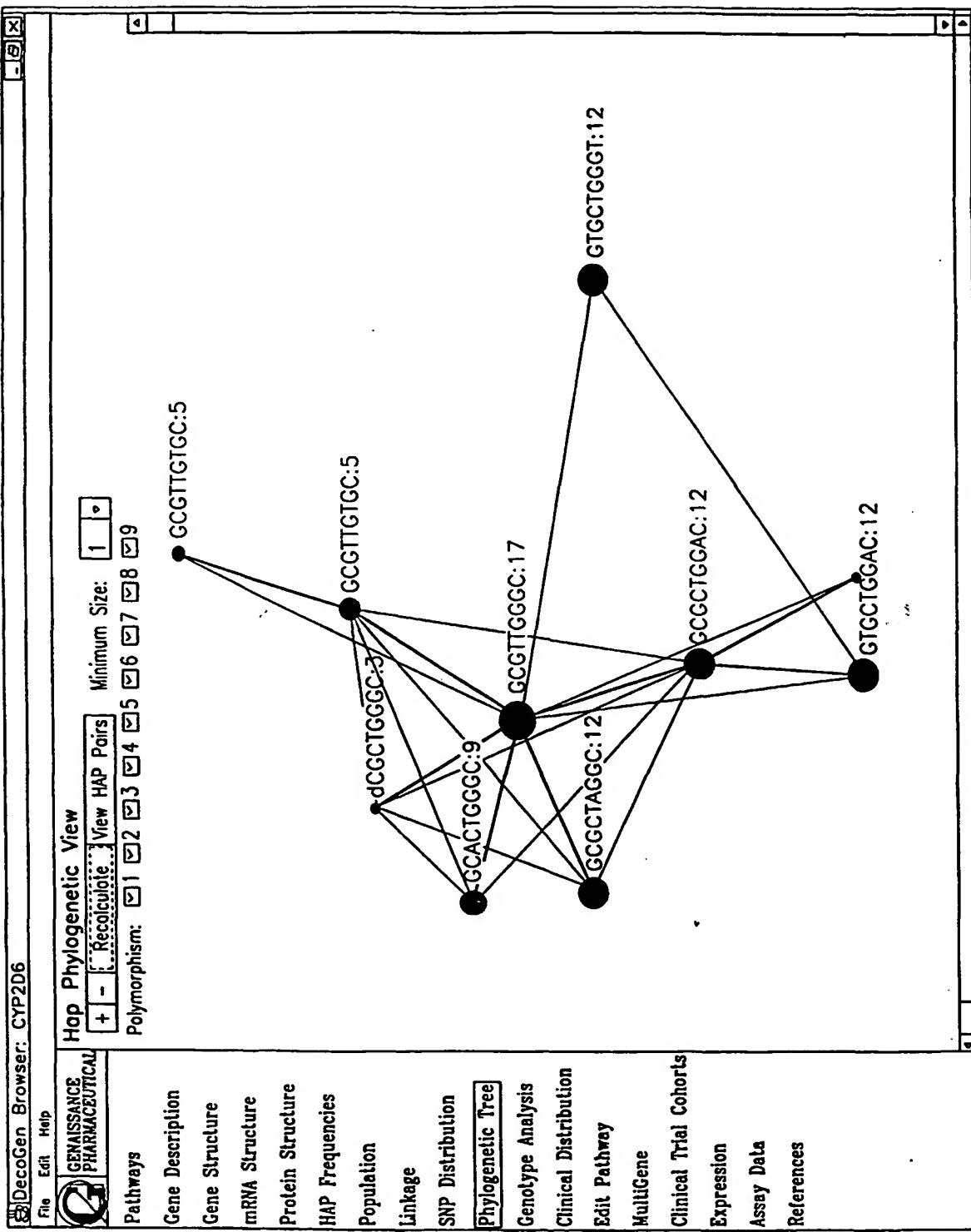
FIG. 16



SUBSTITUTE SHEET (RULE 26)

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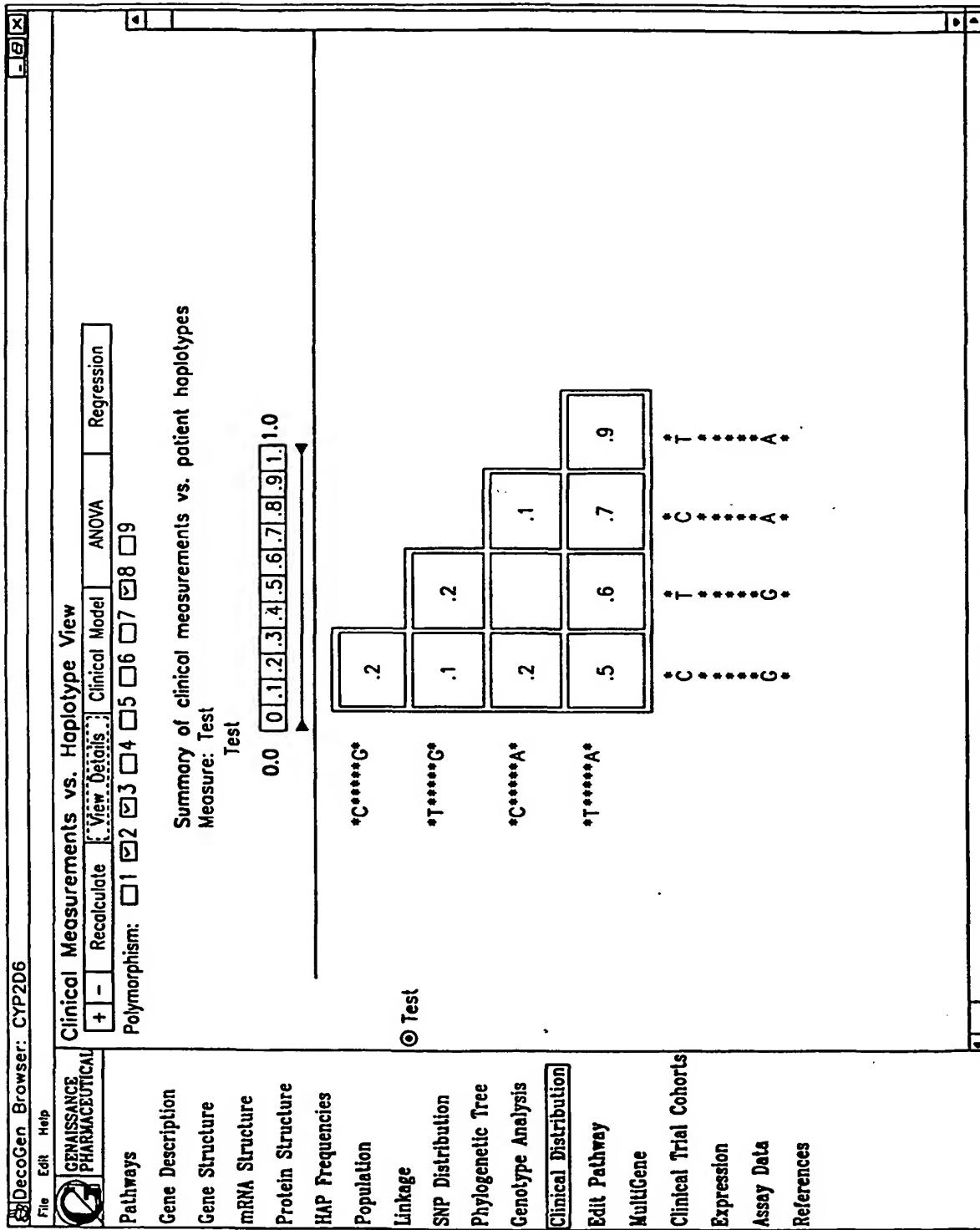
FIG. 17



SUBSTITUTE SHEET (RULE 26)

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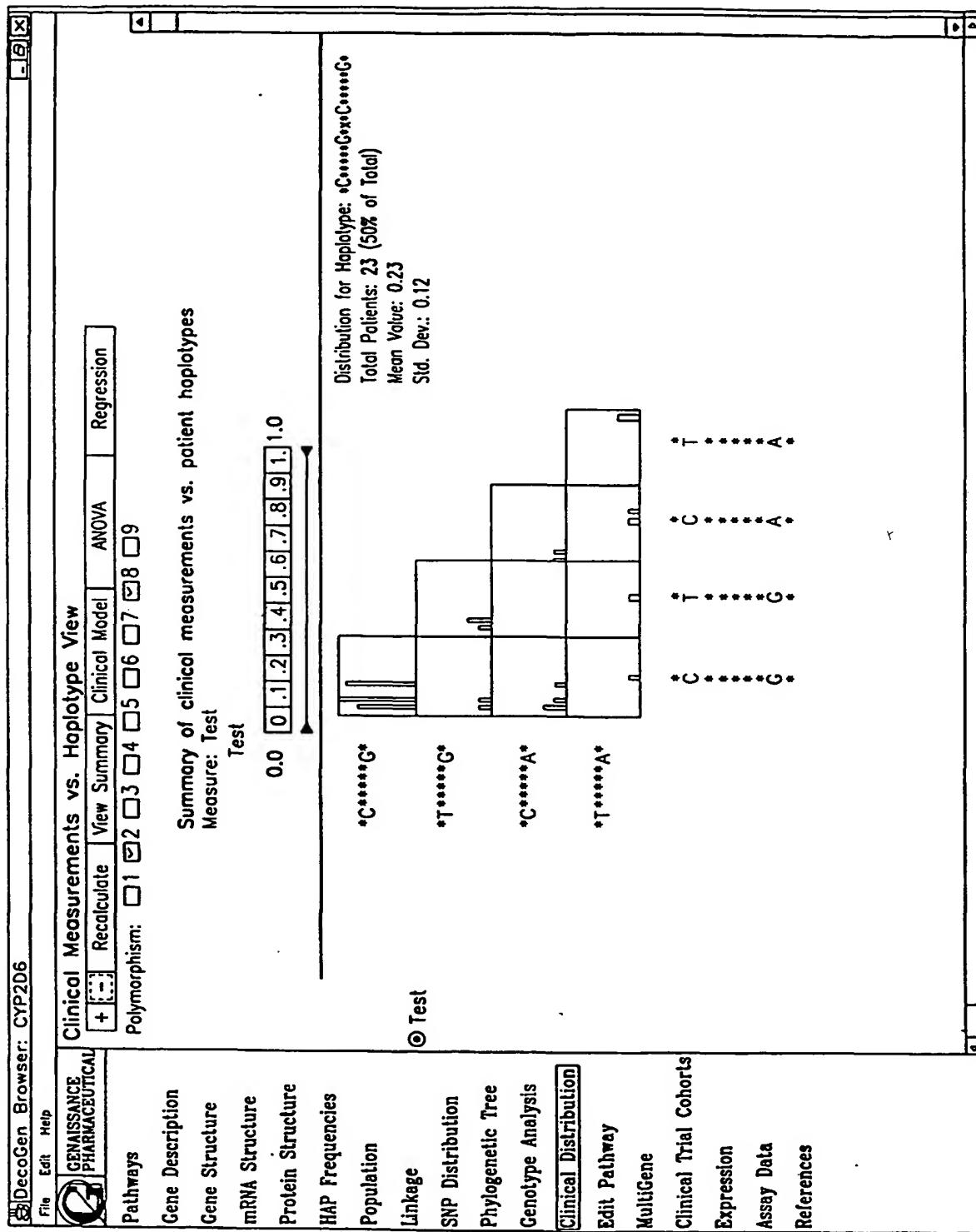
FIG. 18



SUBSTITUTE SHEET (RULE 26)

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FIG. 19



SUBSTITUTE SHEET (RULE 26)

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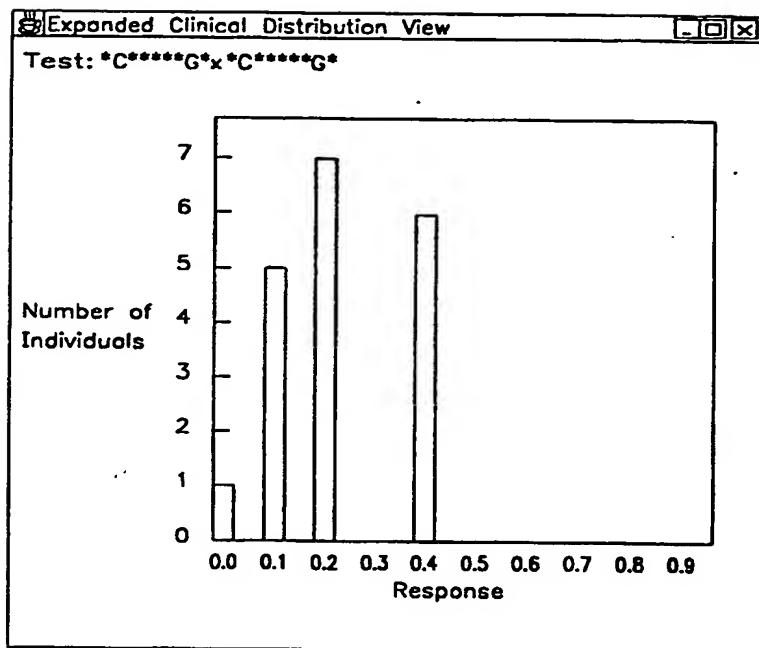


FIG. 20

SUBSTITUTE SHEET (RULE 26)

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DecoGen ANOVA Modeler: Test

Clinical Measurements Regression Calculation

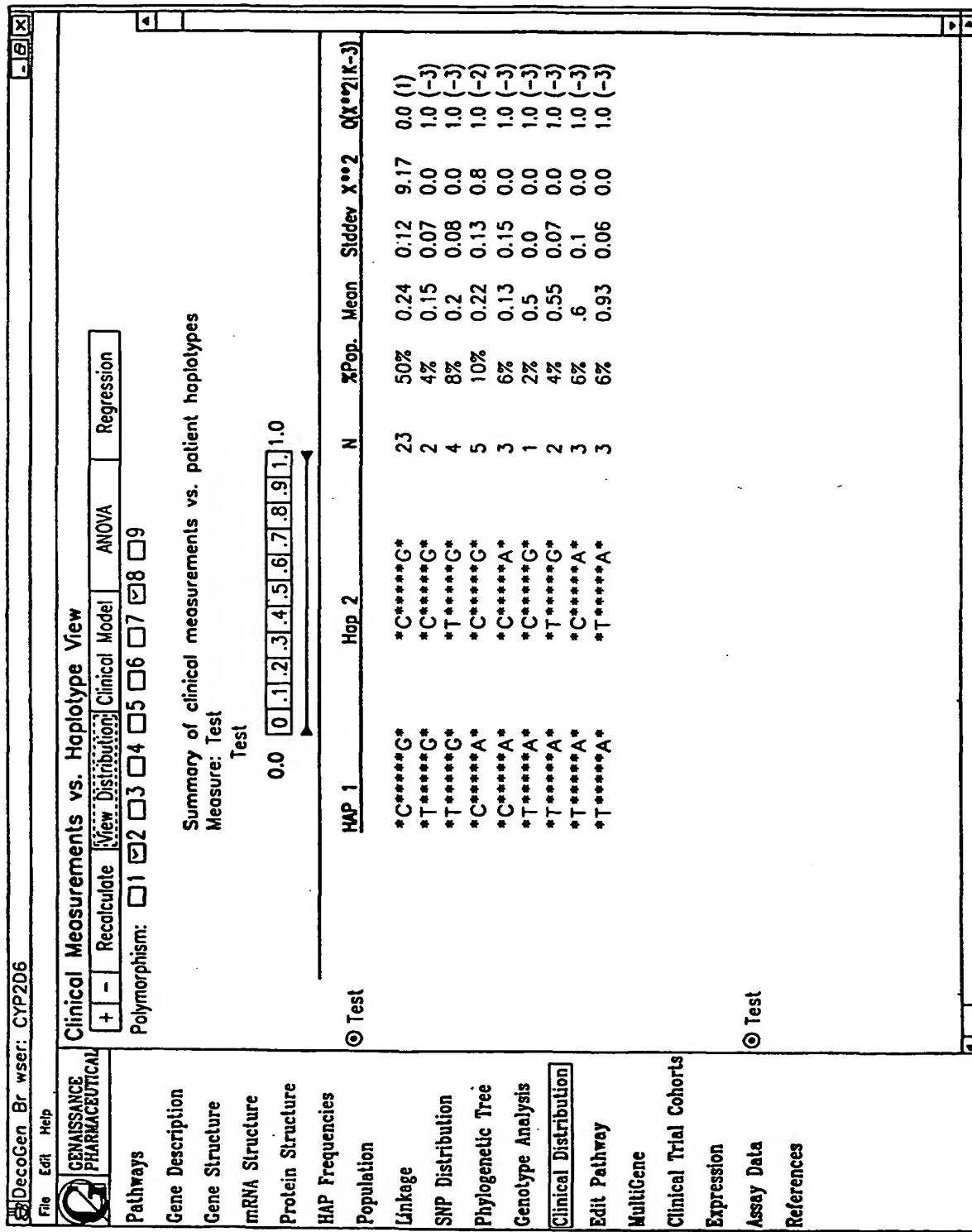
Site	Slope	Intercept	Variance	T(slope)	Significance Level
1	-0.083	0.316	0.05	-0.59	0.7223
2	0.154	0.231	0.04	4.22	0.9999
3	-0.08	0.326	0.05	-1.16	0.8735
4	-0.0080	0.313	0.06	-0.14	0.5572
5	0.145	0.305	0.05	0.86	0.804
6	-0.08	0.332	0.05	-1.24	0.8902
7	0.0070	0.31	0.06	0.08	0.5303
8	0.158	0.222	0.04	4.34	1.0
9	-0.043	0.322	0.05	-0.76	0.7752

FIG. 21

SUBSTITUTE SHEET (RULE 26)

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FIG. 22



SUBSTITUTE SHEET (RULE 26)

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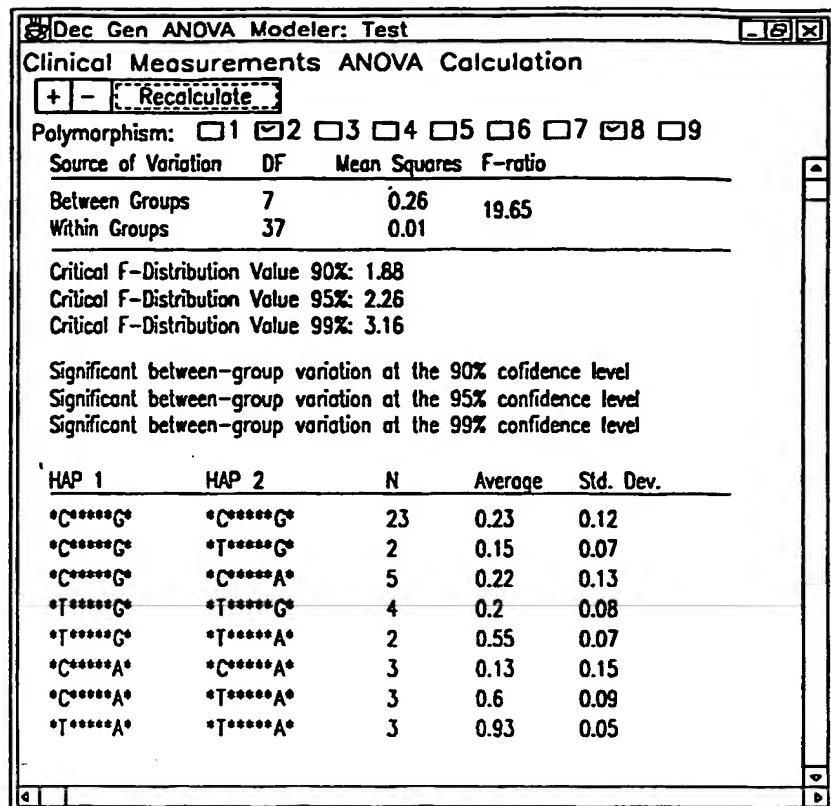


FIG. 23

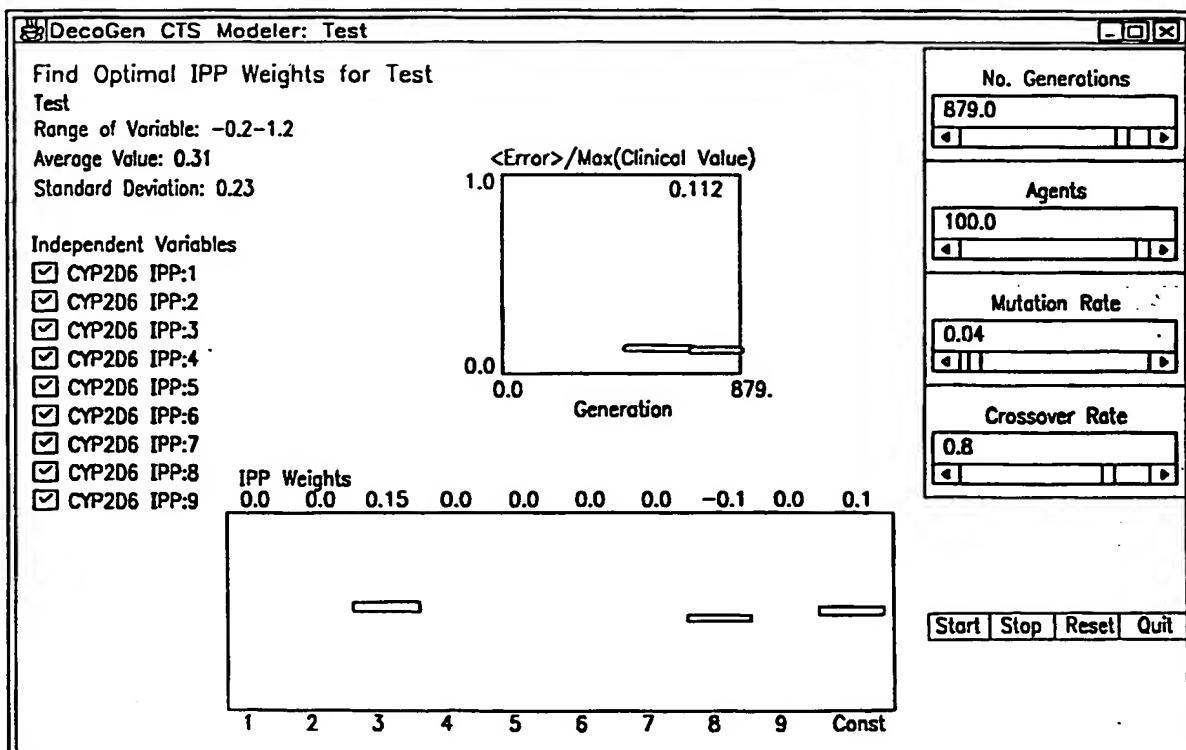


FIG. 24

SUBSTITUTE SHEET (RULE 26)

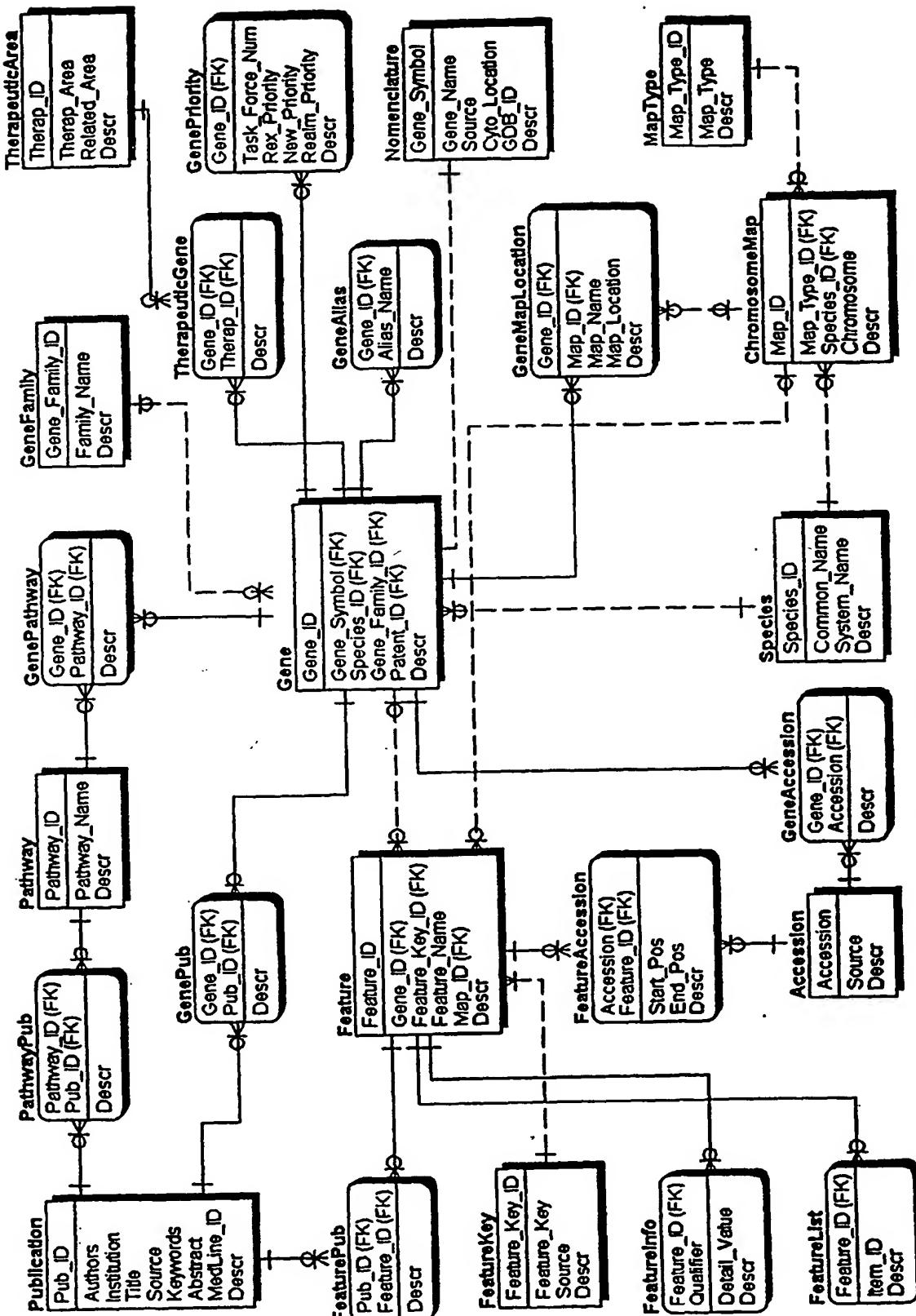


FIG. 25A

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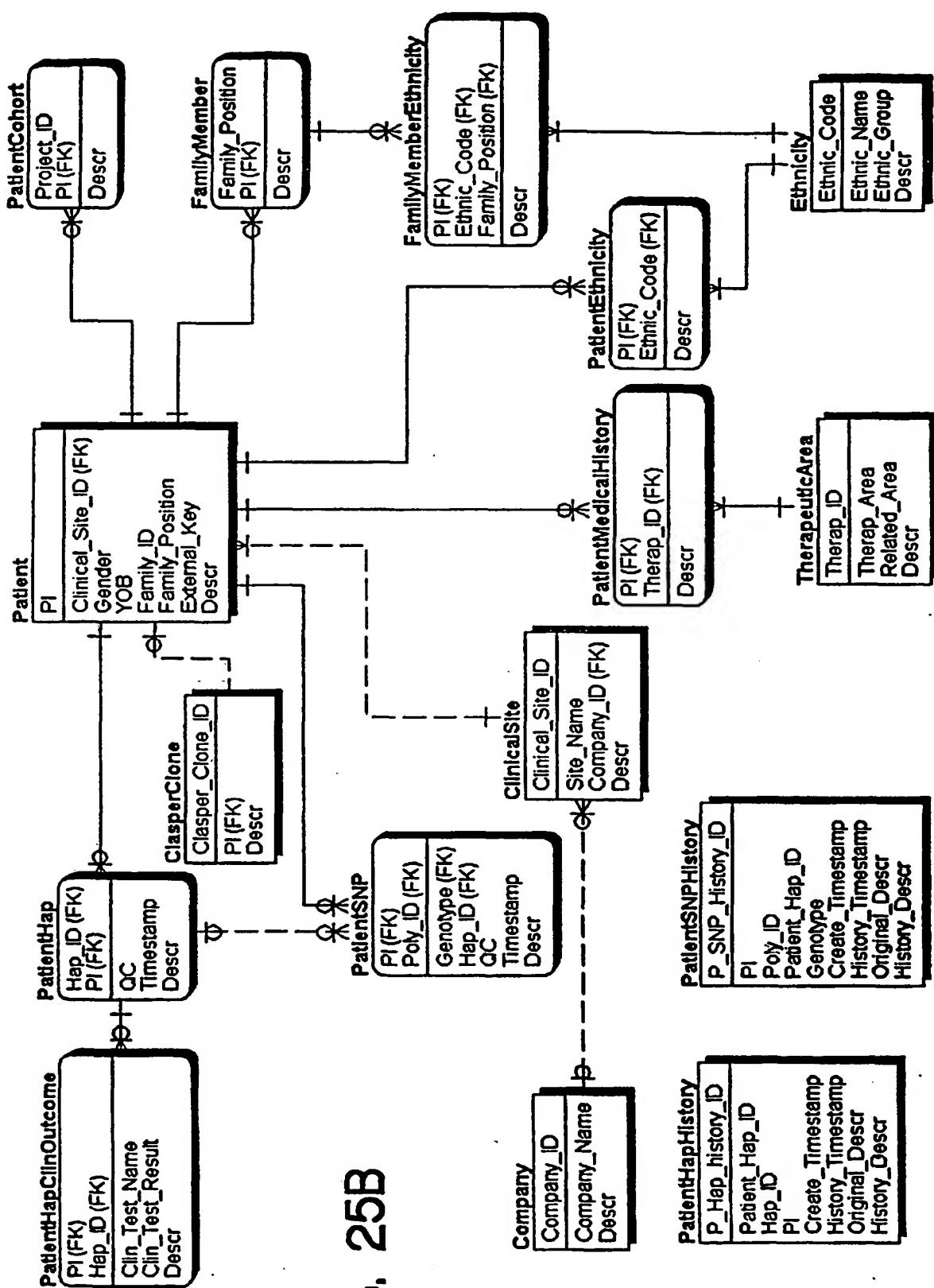


FIG. 25B

SUBSTITUTE SHEET (RULE 26)

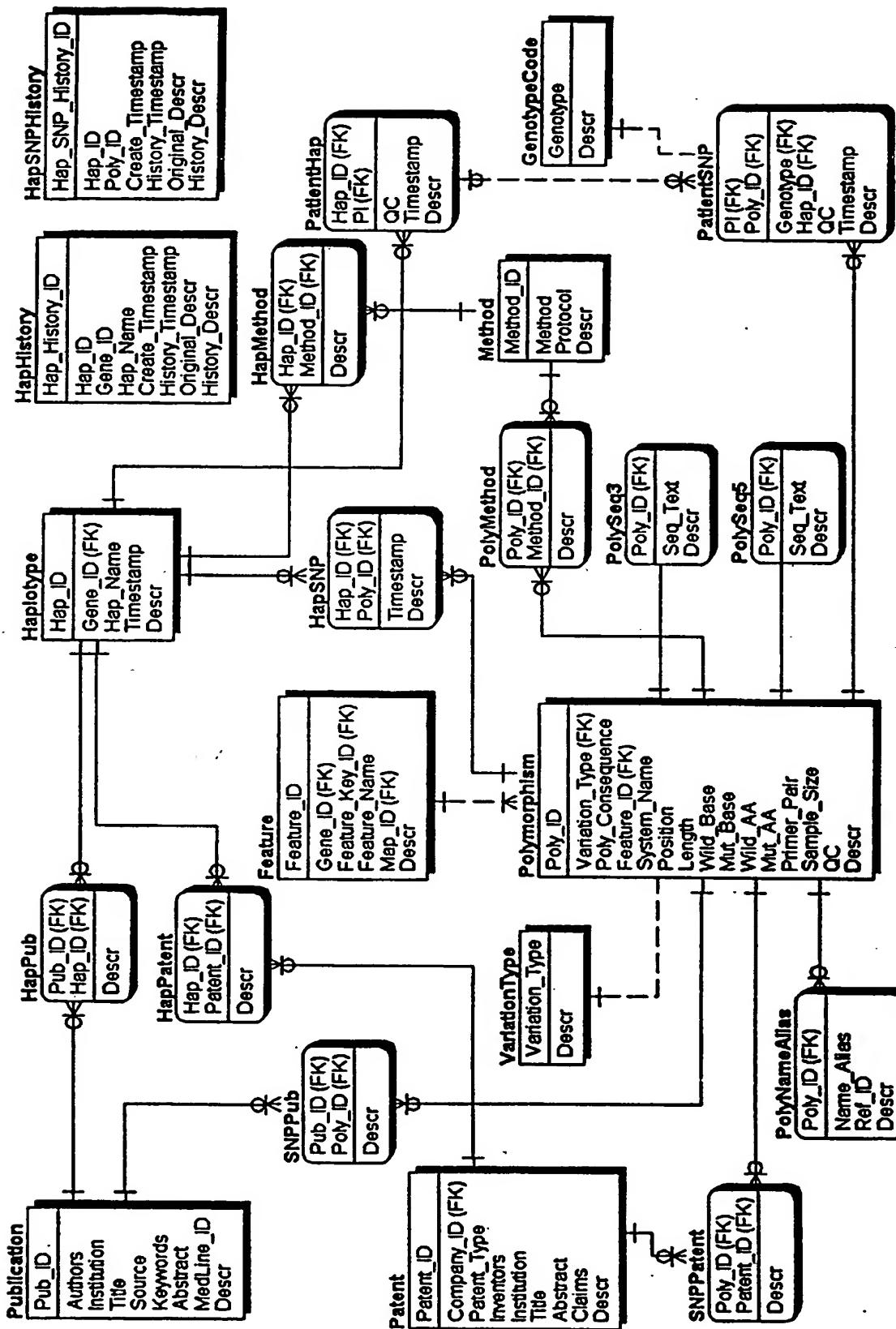


FIG. 25C

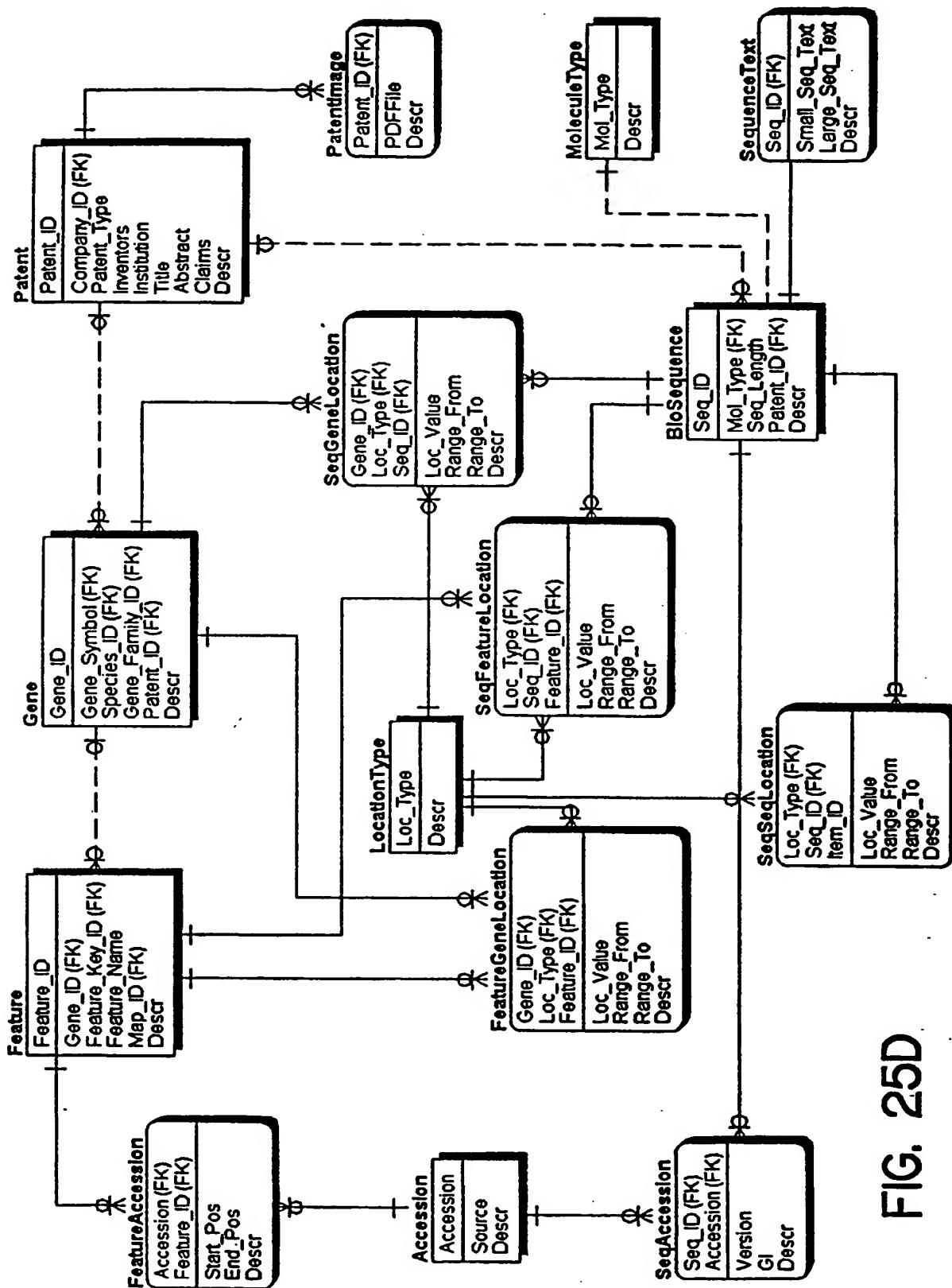


FIG. 25D

SUBSTITUTE SHEET (RULE 26)

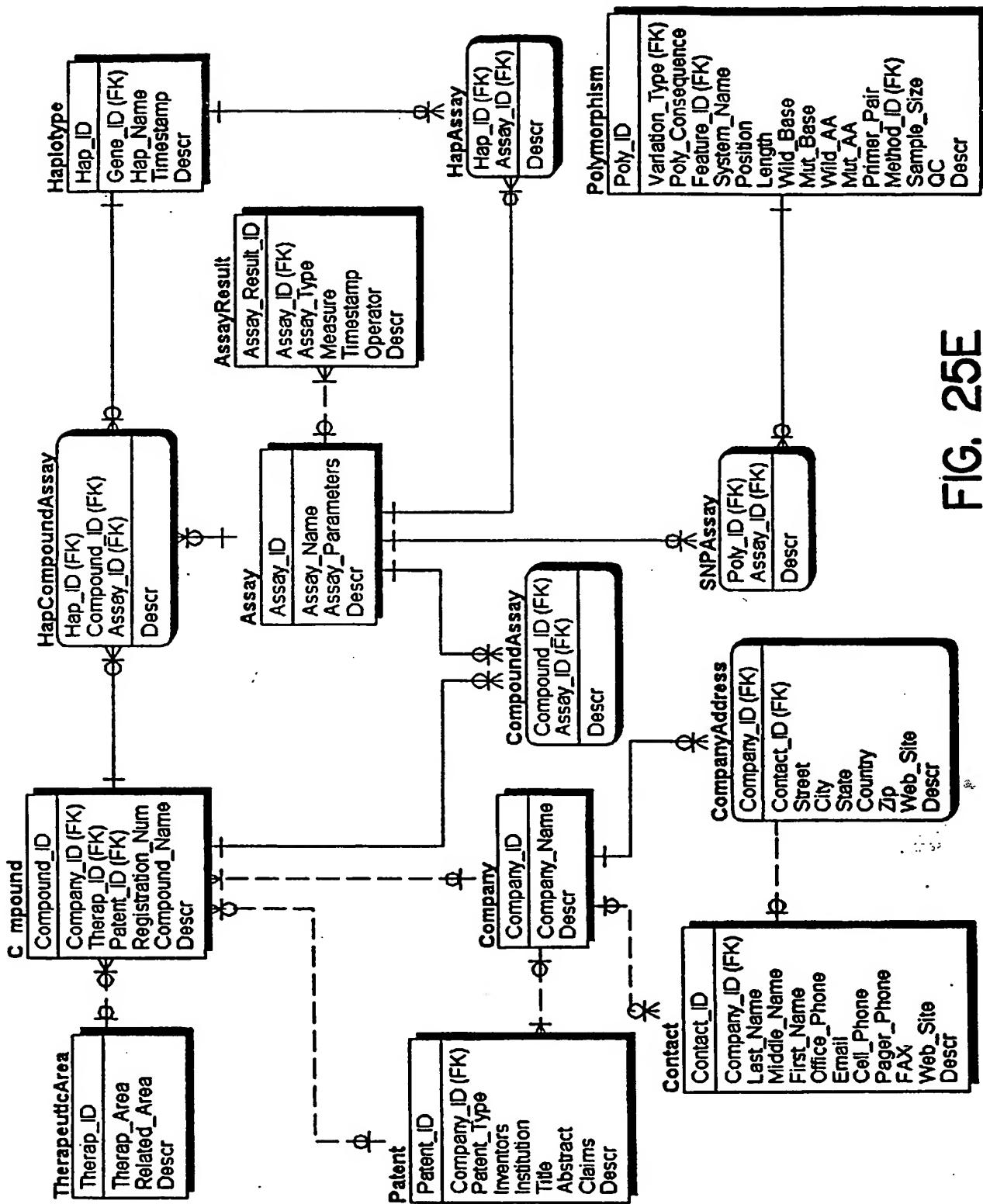


FIG. 25E

*Legend of Figures:*

Rectangle Boxes: Tables in the database.



Rounded Boxes: Children tables that depend on their parent tables. This dependency requires that a parent record to be in existence before a child record can be created.

2: Identifying parent / child relationship. It depicts the not nullable 1-to-0-or-many relationship.

4: Non-identifying parent / child relationship. It represents the nullable 0-or-1-to-many relationship.

6: Identifying parent / child relationship. It depicts the not nullable 1-to-1-or-many relationship.

8: Non-identifying parent / child relationship. It represents the not nullable 1-to-1-or-many relationship.

10: Identifying parent / child relationship. It depicts the not nullable 1-to-exact-1 relationship.

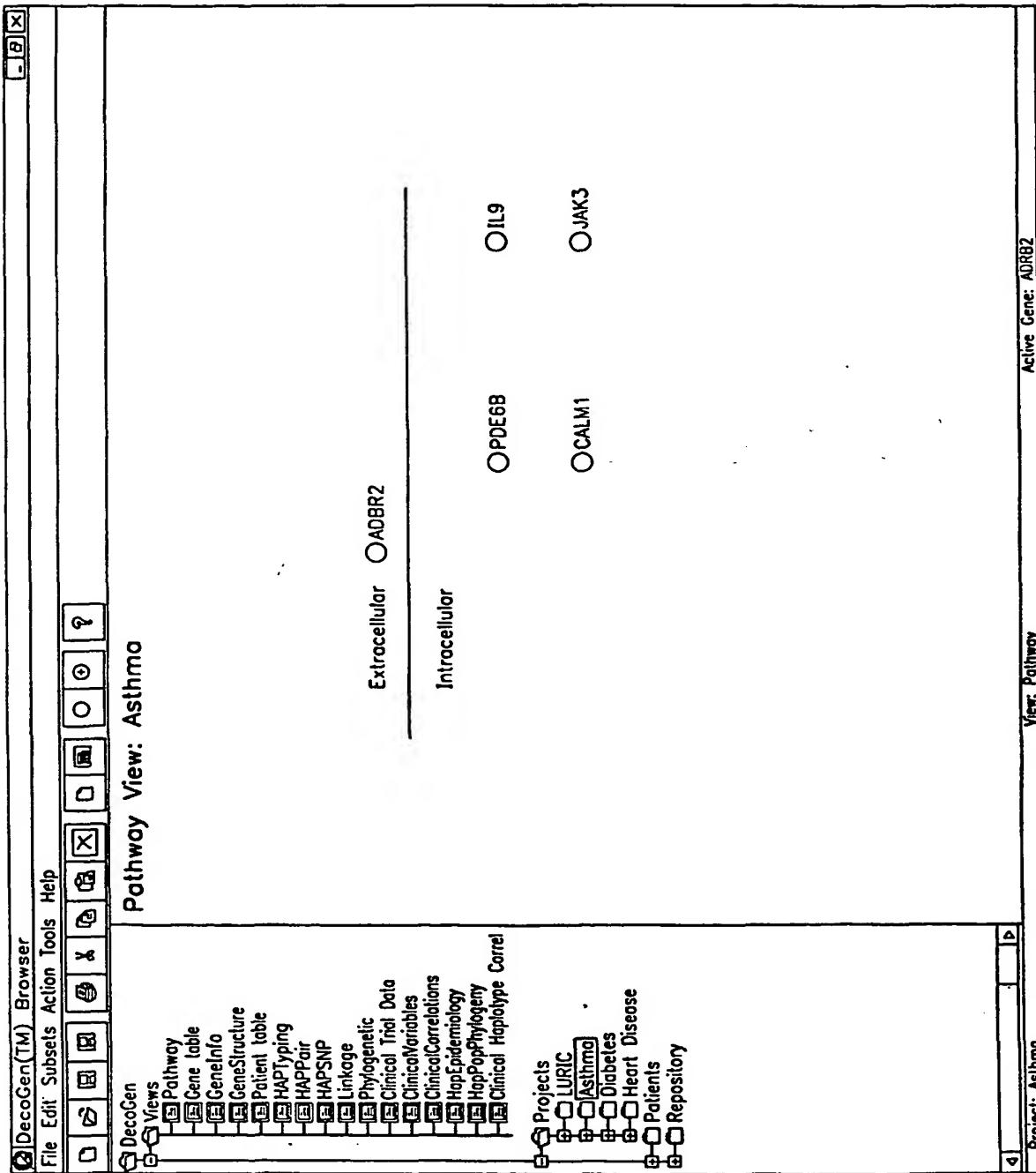
12: Non-identifying parent / child relationship. It represents the nullable 0-or-1-to-exact-1 relationship.

14: Non-identifying parent / child relationship. It represents the not nullable 0-or-1-to-many relationship.

FIG. 25F

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FIG. 26



SUBSTITUTE SHEET (RULE 26)

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FIG. 27

DecoGen(TM) Browser

File Edit Subsets Action Tools Help

DecoGen Views Pathway Gene table GeneInfo GeneStructure Patient table HAPTyping HAPPair HAPSNP Linkage Phylogenetic Clinical Trial Data ClinicalVariables ClinicalCorrelations HapEpidemiology HapPopPhylogeny Clinical Haplotype Correl Projects DOLURIC Asthma Diabetes Heart Disease Patients Repository

Gene Description View

Name	ADRB2
Definition	adrenergic, beta-2-, receptor, surface
Function	Function
Organism	Human
Length	3451
No. Features	5
Population Size	261
No. Haplotypes	12
No. SNPs	13
Nucleotide Polymorphism (het)	7.9E-4 +/- 3.9E-4
Nucleotide Diversity (pi)	4.6E-4 +/- 2.8E-4

Project: Asthma

Active Gene: ADRB2

View: GeneInfo

SUBSTITUTE SHEET (RULE 26)

## FIG. 28A

DecoGen(TM) Browser

File Edit Subsets Action Tools Help

Views Pathway Gene Table GeneInfo GeneStructure Patient Table HAPTyping HAPPair HAPSNP Linkage Phylogenetic Clinical Trial Data Clinical Variables Clinical Correlations HapEpidemiology HapPopPhylogeny Clinical Haplotype Correl Projects LURIC Asthma Diabetes Heart Disease Patients Repository

Gene structure: ADRB2  
adrenergic, beta-2-, receptor, surface

1 ADRB2 promoter 564 M15169.1 565 G/A 52 118 49 42 0.42 0.364 0.493 0.4

2 ADRB2 promoter 878 M15169.1 879 C/A 156 33 33 39 0.3 0.553 0.103 0

3 ADRB2 promoter 934 M15169.1 934 G/A 101 107 46 7 0.355 0.45 0.381 0

4 ADRB2 promoter 1,119 M15169.1 1,120 C/G 86 102 65 8 0.359 0.579 0.443 0

5 ADRB2 promoter 1,181 M15169.1 1,182 C/T 137 33 53 38 0.547 0.921 0.075 0

6 ADRB2 promoter 1,220 M15169.1 1,221 T/C 118 96 39 8 0.067 0.028 0.447 0

7 ADRB2 promoter 1,540 M15169.1 1,541 T/C 95 117 44 5 0.197 0.225 0.467 0

8 ADRB2 promoter 1,567 M15169.1 1,568 C/T 93 99 62 7 0.409 0.05 0.53 0

9 ADRB2 exon 1 264 M15169.1 1,633 G/A 103 113 40 5 0.47 0.3 0.358 0

10 ADRB2 exon 1 297 M15169.1 1,666 C/G 156 65 35 0.061 0 0.38 0

11 ADRB2 exon 1 470 M15169.1 1,839 G/A 163 75 16 7 0.312 0.3 0.159 0

12 ADRB2 exon 1 709 M15169.1 2,078 C/T 209 49 1 2 0.125 0.35 0.039 0

13 Polymorphisms

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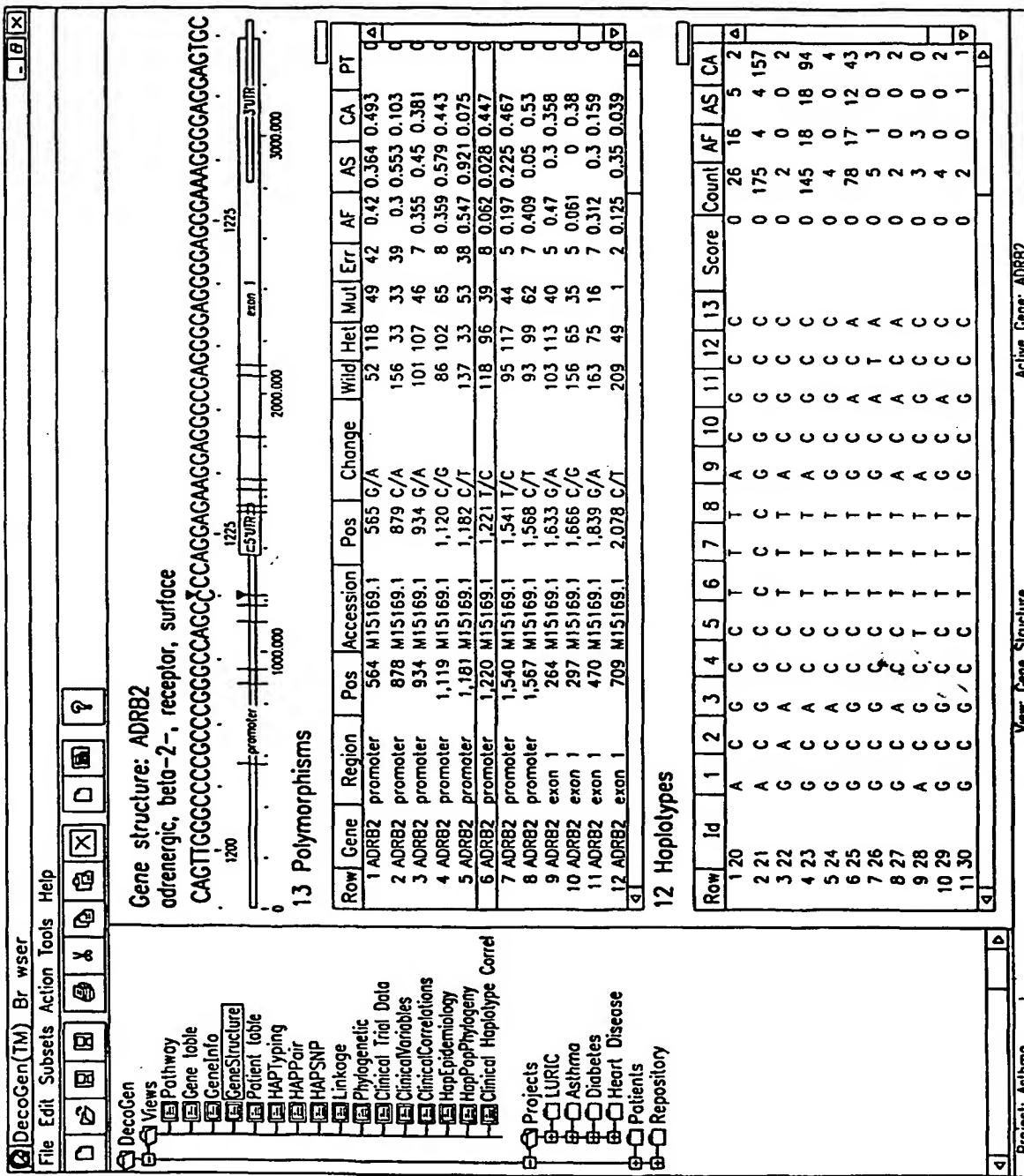
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FIG. 28B



## **SUBSTITUTE SHEET (RULE 26)**

## FIG. 29A

DecoGen(TM) Browser

File Edit Subsets Action Tools Help

Views

Pathway

Gene table

Geneinfo

GeneStructure

Patient table

HAPPyning

HAPPair

HAPSNP

Linkage

Phylogenetic

Clinical Trial Data

ClinicalVariables

ClinicalCorrelations

ClinicalEpidemiology

HaplPopPhylogeny

Clinical Haplotype Correl

Projects

LRIC

Asthma

Diabetes

Heart Disease

Patients

Repository

Patient Cohort View

Family 1333

261 Diplopype Objects

Row	Subject	1	2	3	4	5	6	7	8	9	10	11
113	SL-CA128 G/A	C	C/G	C	T/C	C/T	C/T	C	C/G	C/G	C/G	A
114	SL-CA129 G/A	C	C/G	C	T/C	C/T	C/T	C	C/A	C/G	C/G	C
115	SL-CA130 G	C/A	A	C	T	T	A	C	C	C	C	C
116	SL-CA132 G/A	C	C/G	C	T/C	C/T	C	C	C/G	C/G	C/G	C
117	SL-CA133 G	C	G/A	C	T/C	C/T	C	G/A	C/G	C/G	C/G	C
118	SL-CA137 G/A	C	C/G	C	T/C	C/T	C	C	C/G	C/G	C/G	C
119	SL-CA138 G	C	A	C	T	T	A	C	C	C	C	C
120	SL-CA139 G/A	C	G/A	C	T/C	C/T	C	C/A	C/G	C/G	C/G	C
121	SL-CA140 G/A	C	G/A	C	T/C	C/T	C	C/G	C/G	C/G	C/G	C
122	SL-CA141 G	C	G/A	C	T/C	C/T	C	C/G	C/G	C/G	C/G	C
123	SL-CA142 G	C	A	C	T	T	A	C	C	C	C	C
124	SL-CA143 G	C	A	C	T	T	A	C	C	C	C	C
125	SL-CA144 A	C	G	G	C	C	C	C	C	C	C	C
126	SL-CA146 A	C	G	G	C	C	C	C	C	C	C	C
127	SL-CA148 G/A	C	G/A	C	T/C	C/T	C	C/G	C/G	C/G	C/G	C
128	SL-CA151 G	C	A	C	T	T	A	C	C	C	C	C
129	SL-CA152 G/A	C	G/A	C	T/C	C/T	C	C/G	C/G	C/G	C/G	C
130	SL-CA153 G/A	C	G/C	C	T/C	C/T	C	C/G	C/G	C/G	C/G	C
131	SL-CA154 G	C	G/A	C	T	T	A	C	C	C	C	C
132	SL-CA156 A	C	G	G	C	C	C	C	C	C	C	C
133	SL-CA160 C	C	A	C	T	T	A	C	C	C	C	C
134	SL-CA163 G/A	C	G/A	C	T/C	C/T	C	C/G	C/G	C/G	C/G	C
135	SL-CA164 G/A	C	G/A	C	T/C	C/T	C	C/G	C/G	C/G	C/G	C
136	SL-CA165 G/A	C	G/A	C	T/C	C/T	C	C/G	C/G	C/G	C/G	C
137	SL-CA166 G/A	C	G/A	C	T/C	C/T	C	C/G	C/G	C/G	C/G	C

12 Haplotype Objects

Row	Id	1	2	3	4	5	6	7	8	9	10	11
1	20	A	C	C	C	C	C	C	C	C	C	C
2	21	A	C	C	C	C	C	C	C	C	C	C
3	22	C	A	A	C	C	C	C	C	C	C	C
4	23	C	C	A	C	C	C	C	C	C	C	C
5	24	C	C	A	C	C	C	C	C	C	C	C
6	25	C	C	C	C	C	C	C	C	C	C	C

Active Gen: ADNB2

View: Patient Table

Project: Asthma

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FIG. 29B

DecoGen(TM) Browser

File Edit Subsets Action Tools Help

D E F G H I J K L ?

Clinical Trial Data

82 Patient Measurement Objects

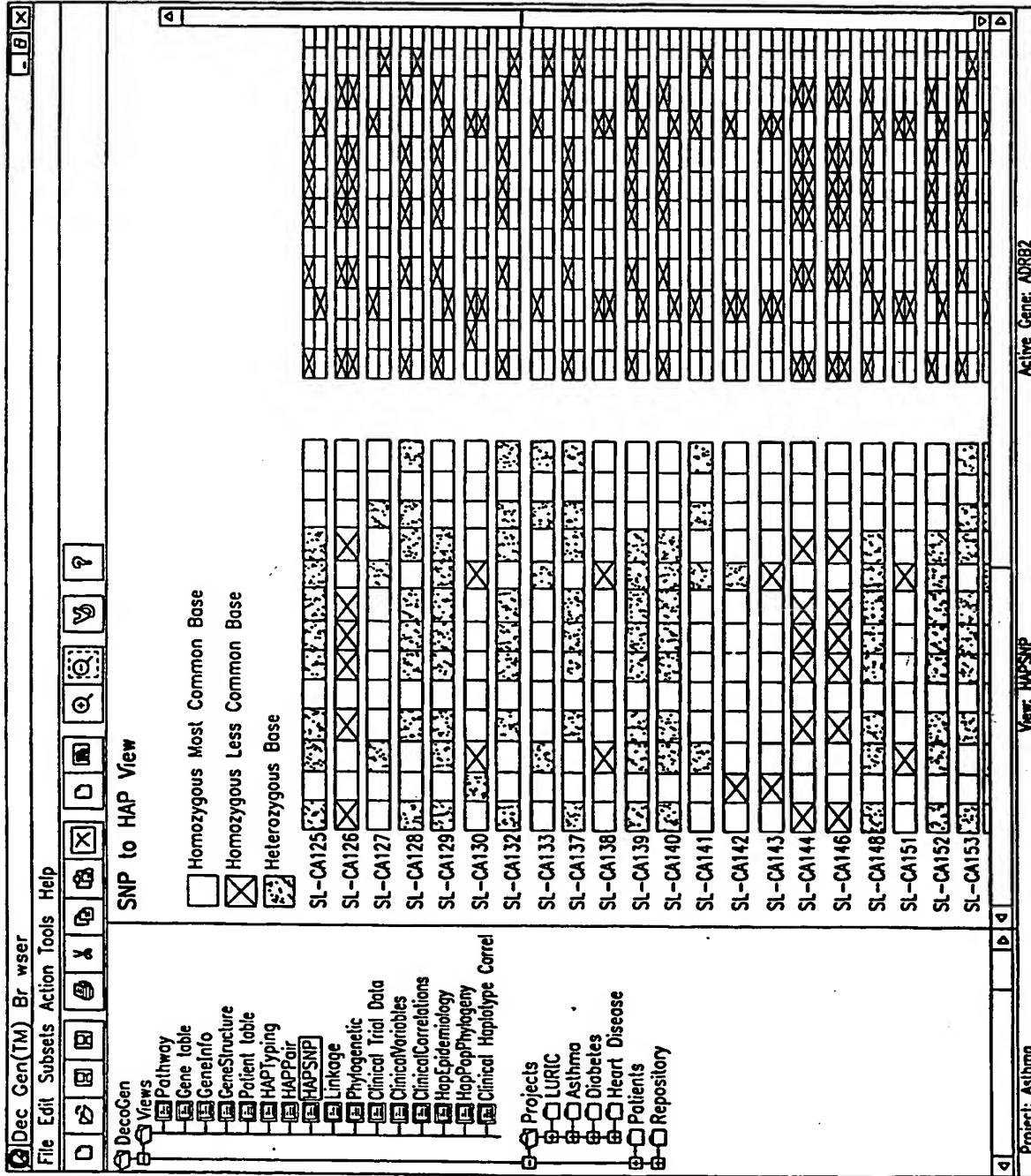
Row	Patient	Severity	Skin Test...	FEV1 %P...	FEV1 L...	FEV1 %...	FEV1 / FV...				
1	1 SL-AA131	2.0	1.08	58.0	1.28	52.0	68.0	0.83	49.0	1.81	4
2	2 SL-AA134	2.0	1.0	54.0	0.96	34.0	48.0	0.45	12.0	2.2	
3	3 SL-AA136	0.0	0.0	2.56	89.0	2.22	93.0	87.0	3.2	91.0	2.5
4	4 SL-AA150	2.0	1.0	1.4	50.0	0.6	27.0	43.0	0.22	7.0	1.5
5	5 SL-AA155	2.0	1.0	1.77	40.0	0.98	27.0	55.0	0.61	16.0	2.2
6	6 SL-AA159	2.0	1.0	2.89	66.0	1.71	51.0	59.0	0.9	20.0	4.4
7	7 SL-AA195	1.0	1.0	4.28	96.0	2.7	79.0	63.0	1.48	33.0	5.2
8	8 SL-AA211	1.0	1.0	3.44	91.0	1.97	66.0	57.0	1.39	32.0	5.5
9	9 SL-AA227	2.0	0.0	1.93	54.0	0.96	37.0	49.0	0.35	11.0	2.5
10	10 SL-AA253	1.0	1.0	3.0	96.0	2.01	70.0	57.0	0.99	25.0	3.8
11	11 SL-AA270	NP	NP	NP	NP	NP	NP	NP	NP	NP	
12	12 SL-AA275	NP	NP	NP	NP	NP	NP	NP	NP	NP	
13	13 SL-CA101	1.0	1.0	2.17	85.0	1.92	64.0	71.0	1.33	38.0	1.2
14	14 SL-CA103	2.0	1.0	3.56	59.0	2.16	46.0	61.0	1.13	18.0	4.1
15	15 SL-CA104	2.0	0.0	2.76	57.0	1.46	39.0	53.0	0.59	16.0	3.4
16	16 SL-CA105	2.0	0.0	1.99	62.0	1.11	46.0	57.0	0.55	24.0	2.3
17	17 SL-CA106	0.0	1.0	3.46	82.0	2.69	63.0	57.0	2.28	51.0	4.4
18	18 SL-CA107	0.0	1.0	3.82	113.0	2.59	83.0	78.0	1.7	46.0	3.9
19	19 SL-CA108	NP	NP	NP	NP	NP	NP	NP	NP	NP	
20	20 SL-CA109	1.0	1.0	2.63	93.0	1.7	7.0	64.5	0.89	25.0	2.8
21	21 SL-CA110	0.0	1.0	4.56	114.0	3.18	101.0	70.0	2.24	51.0	4.5
22	22 SL-CA111	2.0	1.0	3.08	69.0	2.01	58.0	65.0	1.12	32.0	3.3
23	23 SL-CA114	1.0	0.0	2.83	84.0	2.18	77.0	1.77	43.0	3.0	
24	24 SL-CA116	1.0	1.0	2.44	83.0	1.91	79.0	78.0	1.8	49.0	2.4
25	25 SL-CA117	1.0	1.0	3.81	90.0	2.25	67.0	59.0	1.04	22.0	4.1
26	26 SL-CA118	1.0	1.0	1.53	76.0	1.27	71.0	83.0	1.27	49.0	1.6
27	27 SL-CA119	NP	NP	NP	NP	NP	NP	NP	NP	NP	
28	28 SL-CA120	0.0	1.0	4.24	106.0	2.71	83.0	64.0	1.61	33.0	4.4
29	29 SL-CA121	1.0	0.0	3.05	88.0	1.9	70.0	62.0	0.95	26.0	3.6
30	30 SL-CA122	0.0	1.0	5.76	105.0	4.35	103.0	75.5	3.52	62.0	6.0
31	31 SL-CA123	2.0	1.0	1.82	66.0	0.92	40.0	50.0	0.41	12.0	2.5
32	32 SL-CA124	2.0	0.0	2.45	59.0	1.3	43.0	53.0	0.41	11.0	2.5
33	33 SL-CA125	2.0	1.0	1.19	42.0	0.81	37.0	68.0	0.47	22.0	1.3
34	34 SL-CA126	2.0	0.0	1.74	64.0	1.17	52.0	67.0	0.55	18.0	1.8
35	35 SL-CA127	1.0	1.0	1.97	68.7	1.63	71.0	83.0	1.49	66.6	2.6

View: Clinical Trial Data

Project: Asthma

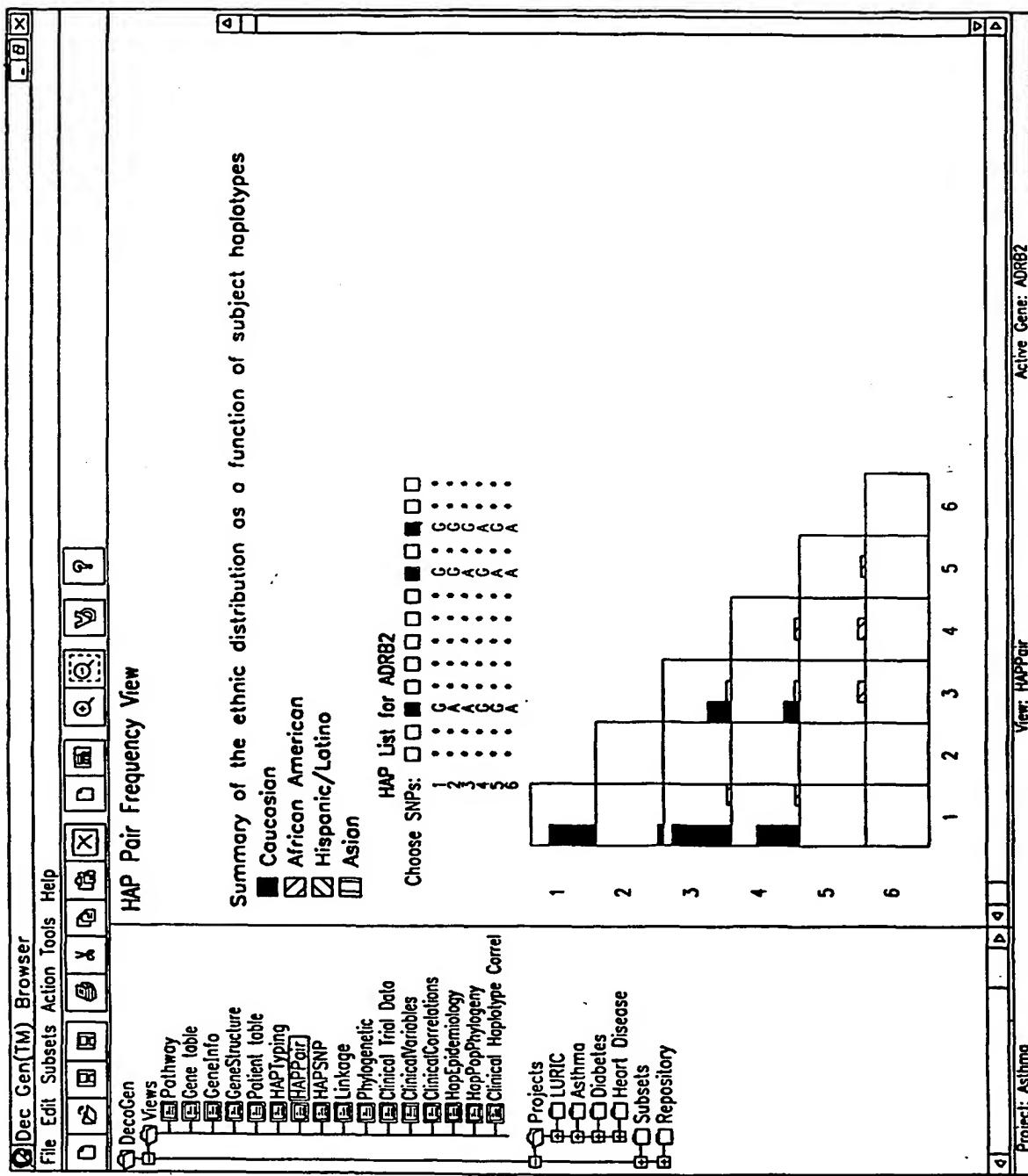
SUBSTITUTE SHEET (RULE 26)

FIG. 30



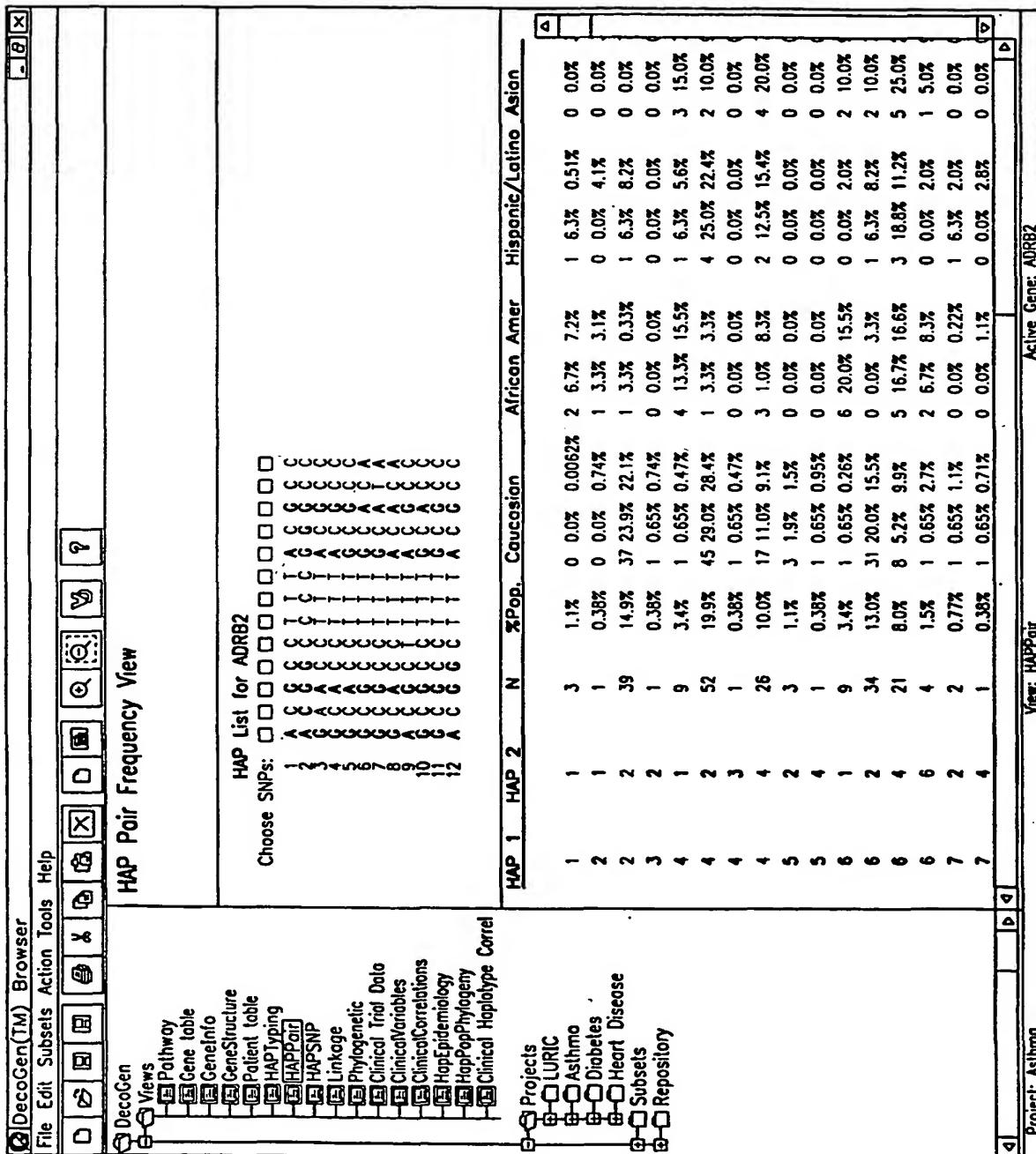
SUBSTITUTE SHEET (RULE 26)

3  
FIG.



## **SUBSTITUTE SHEET (RULE 26)**

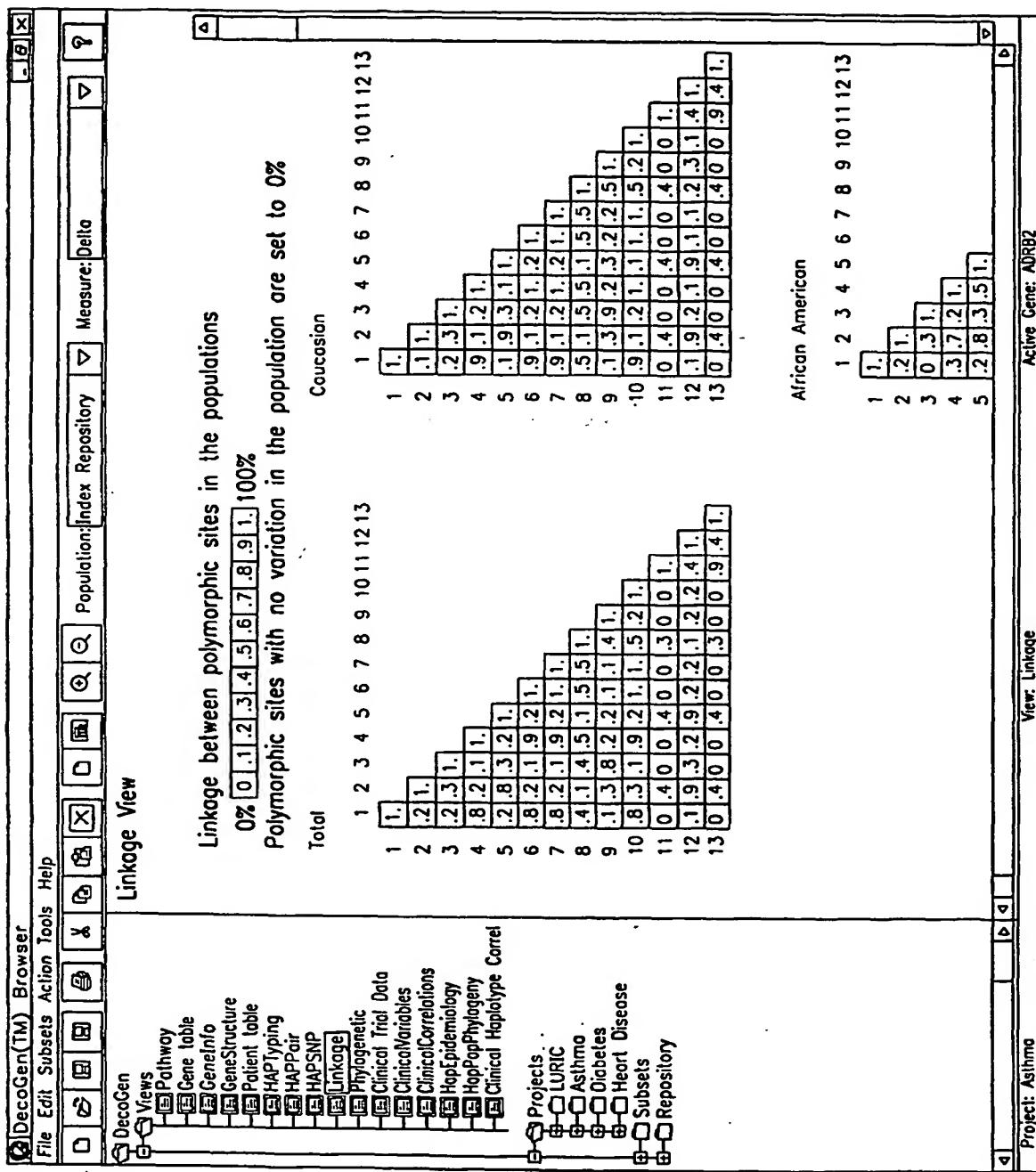
FIG. 32



## SUBSTITUTE SHEET (RULE 26)

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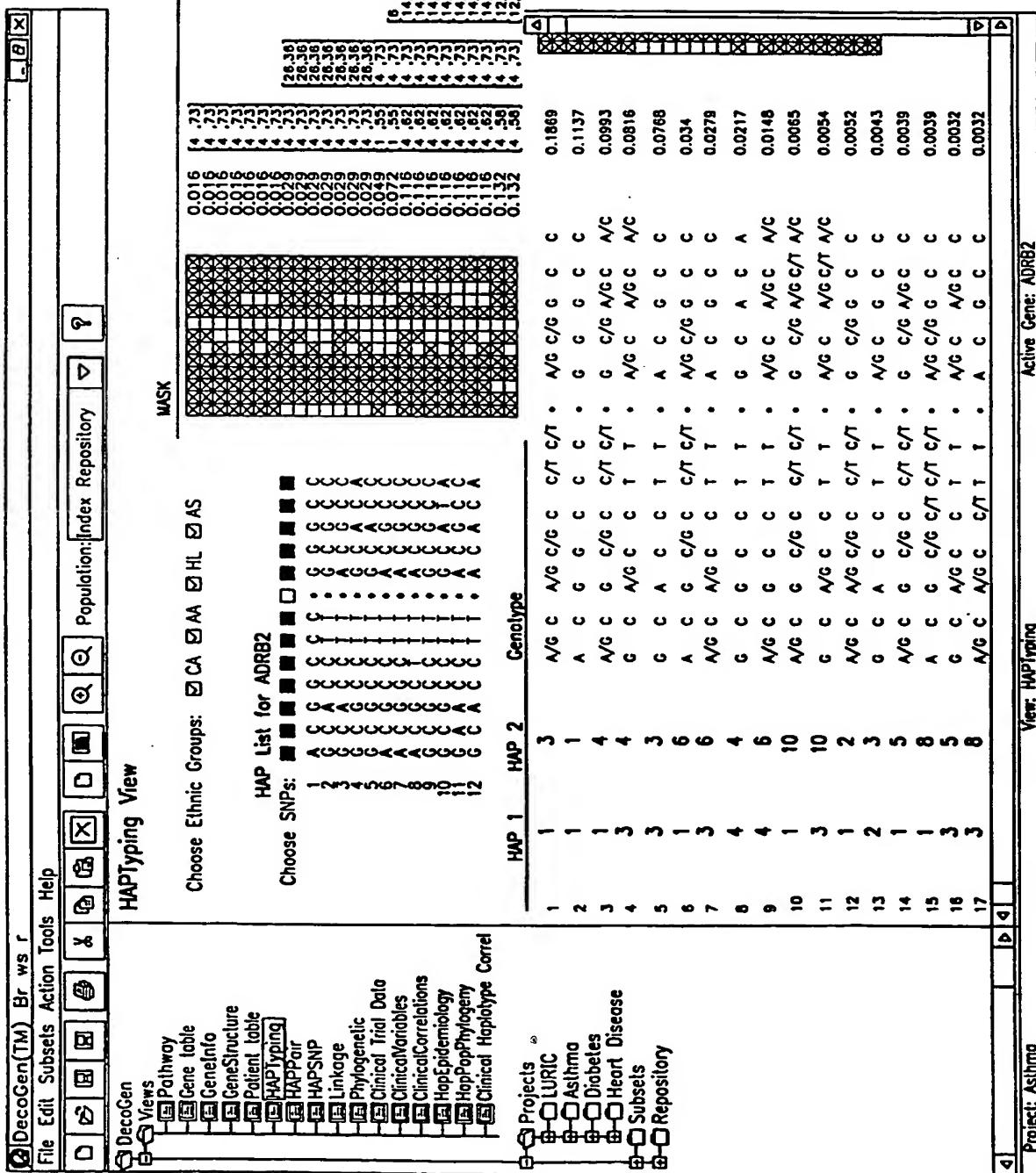
FIG. 33



SUBSTITUTE SHEET (RULE 26)

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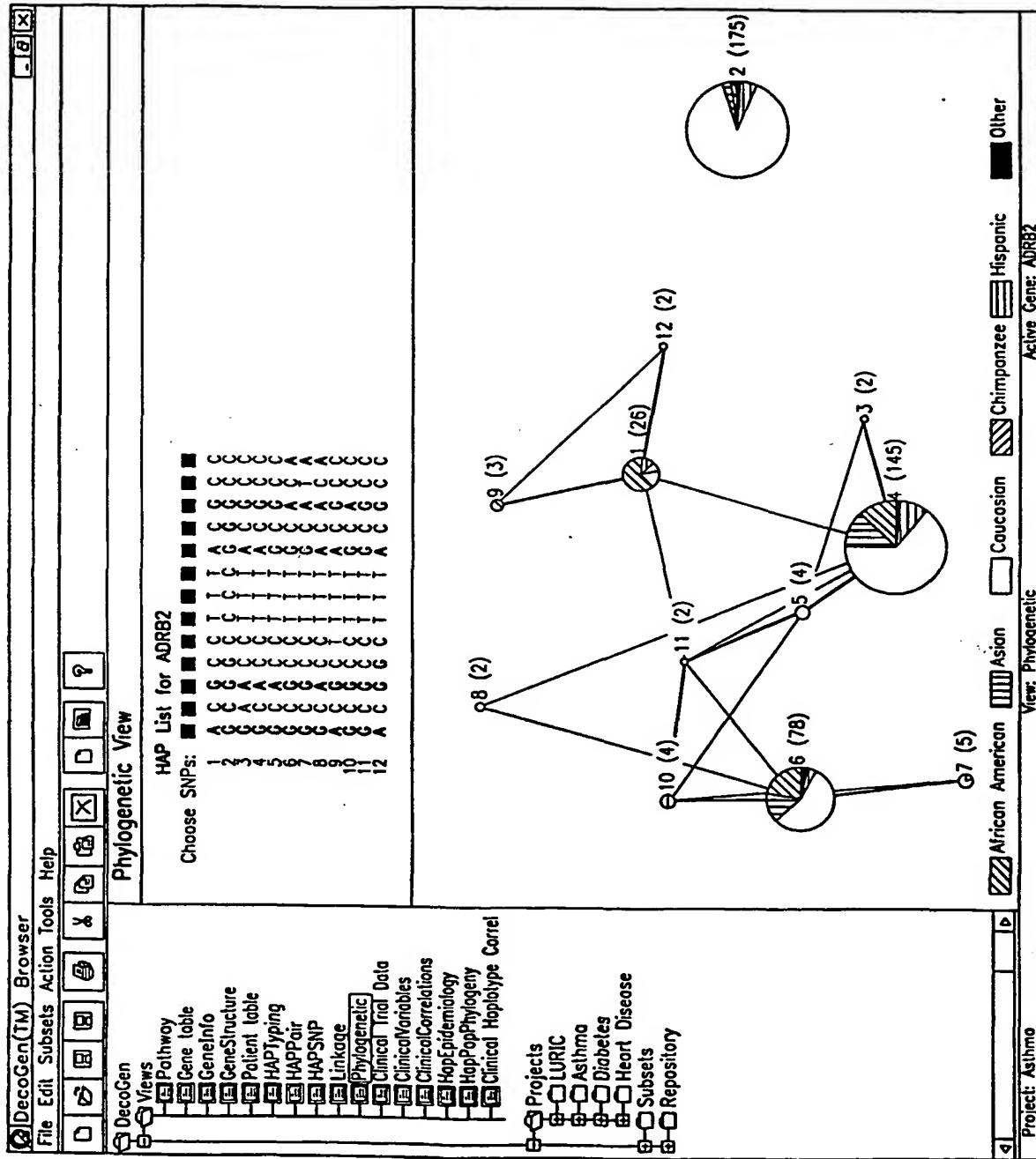
FIG. 34



## **SUBSTITUTE SHEET (RULE 26)**

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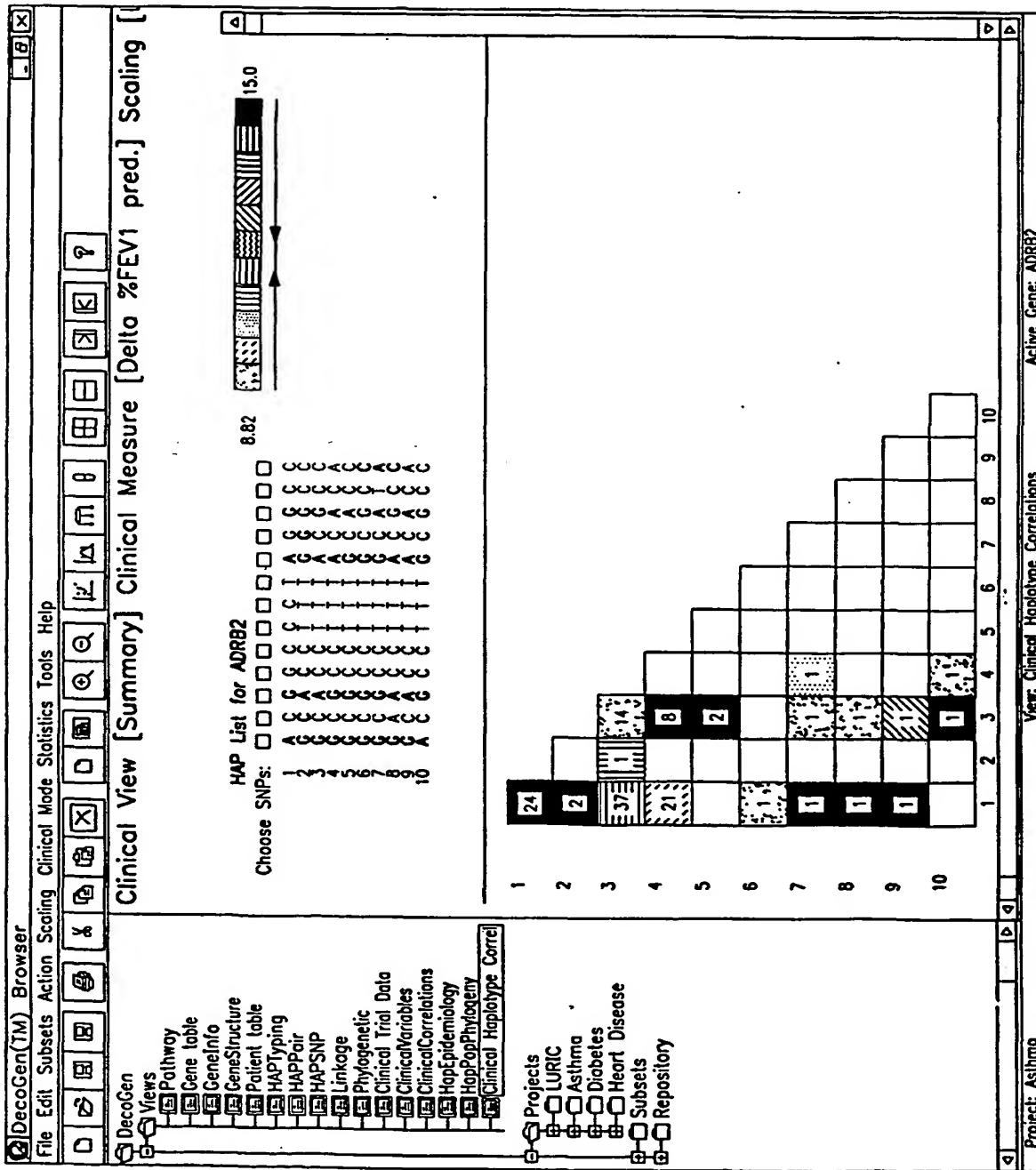
FIG. 35



SUBSTITUTE SHEET (RULE 26)

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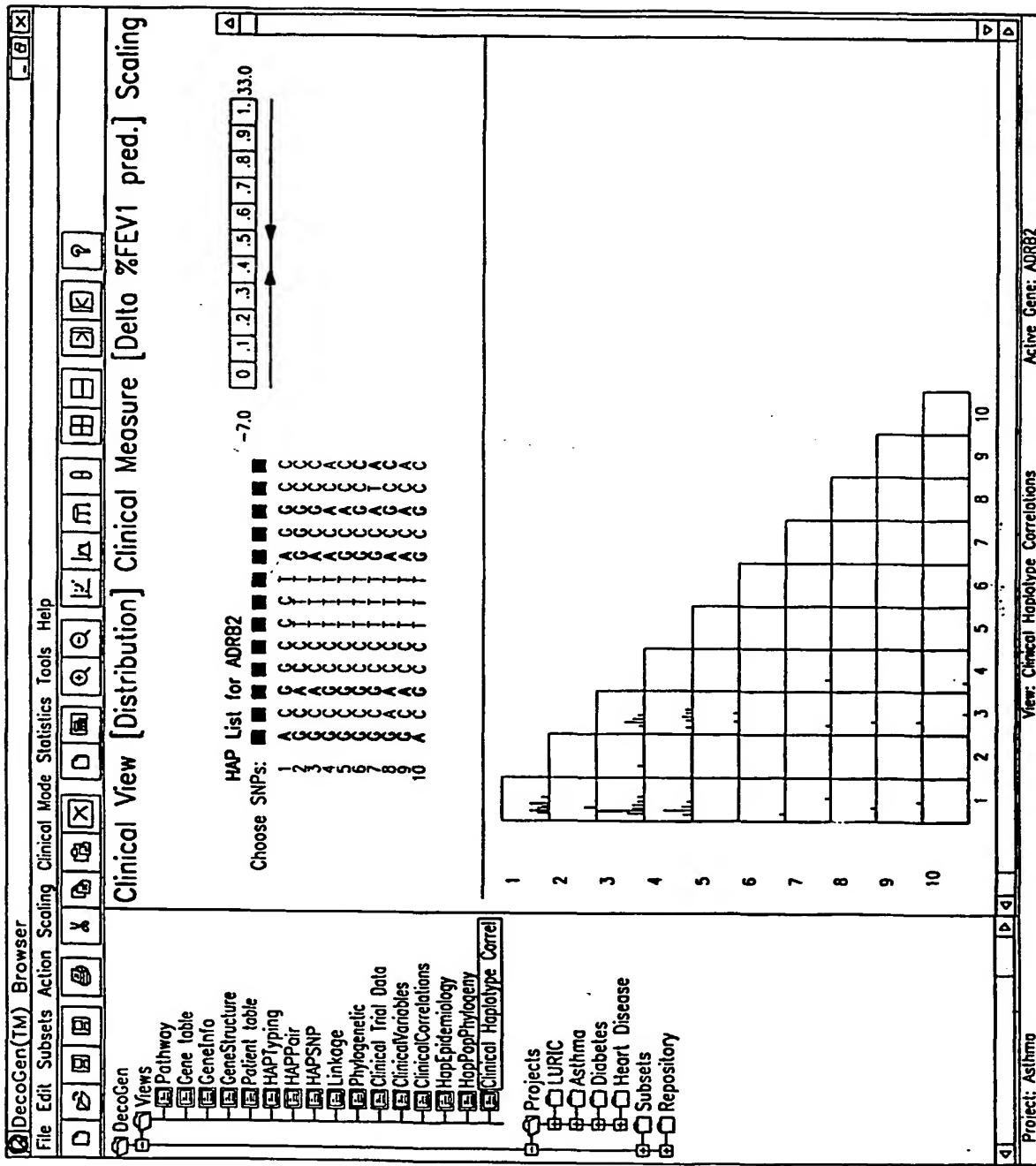
FIG. 36



## **SUBSTITUTE SHEET (RULE 26)**

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FIG. 37



SUBSTITUTE SHEET (RULE 26)

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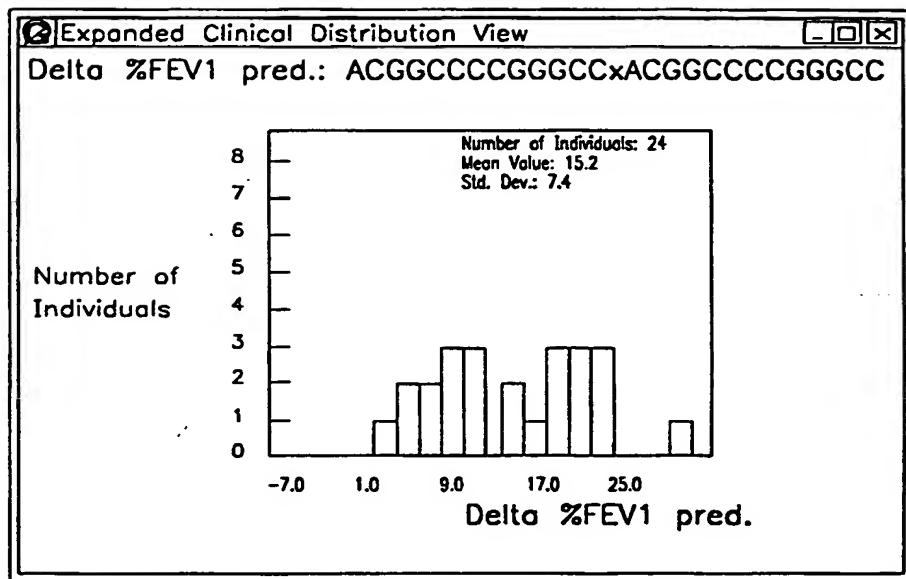


FIG. 38

SUBSTITUTE SHEET (RULE 26)

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WO 01/01218

PCT/US00/17540

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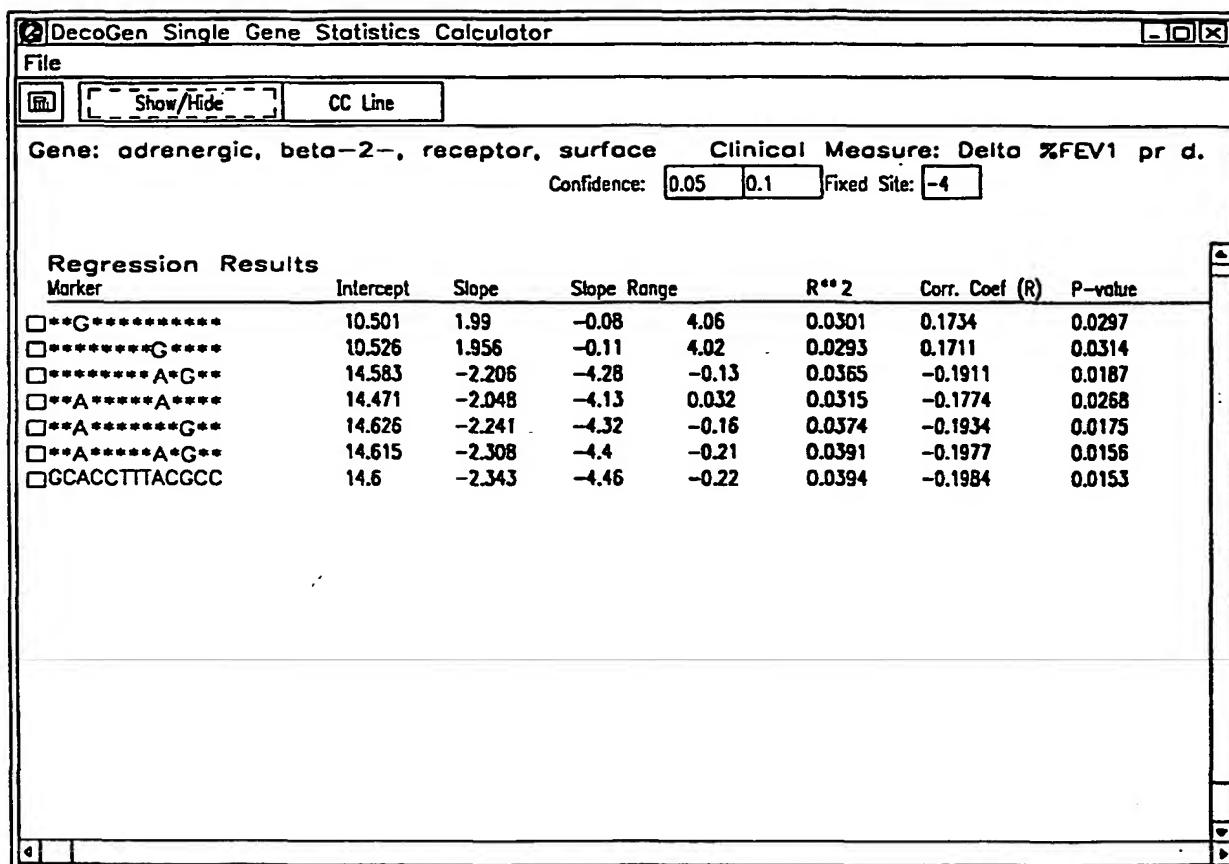


FIG. 39A

SUBSTITUTE SHEET (RULE 26)

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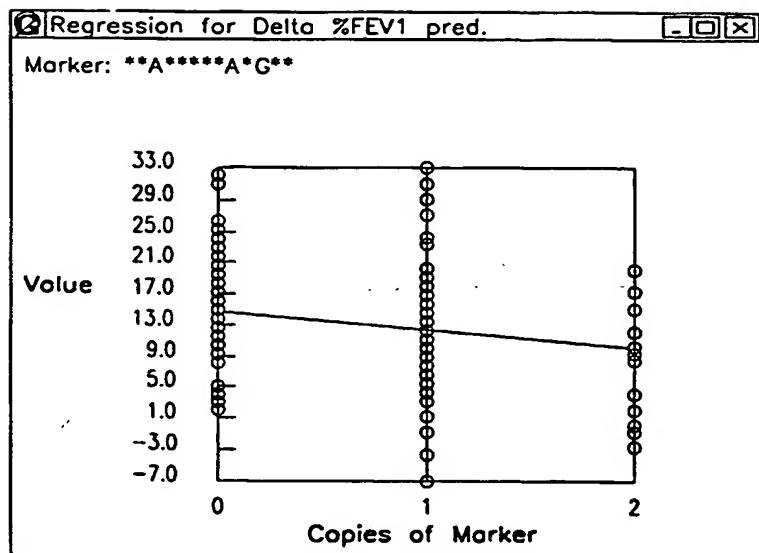
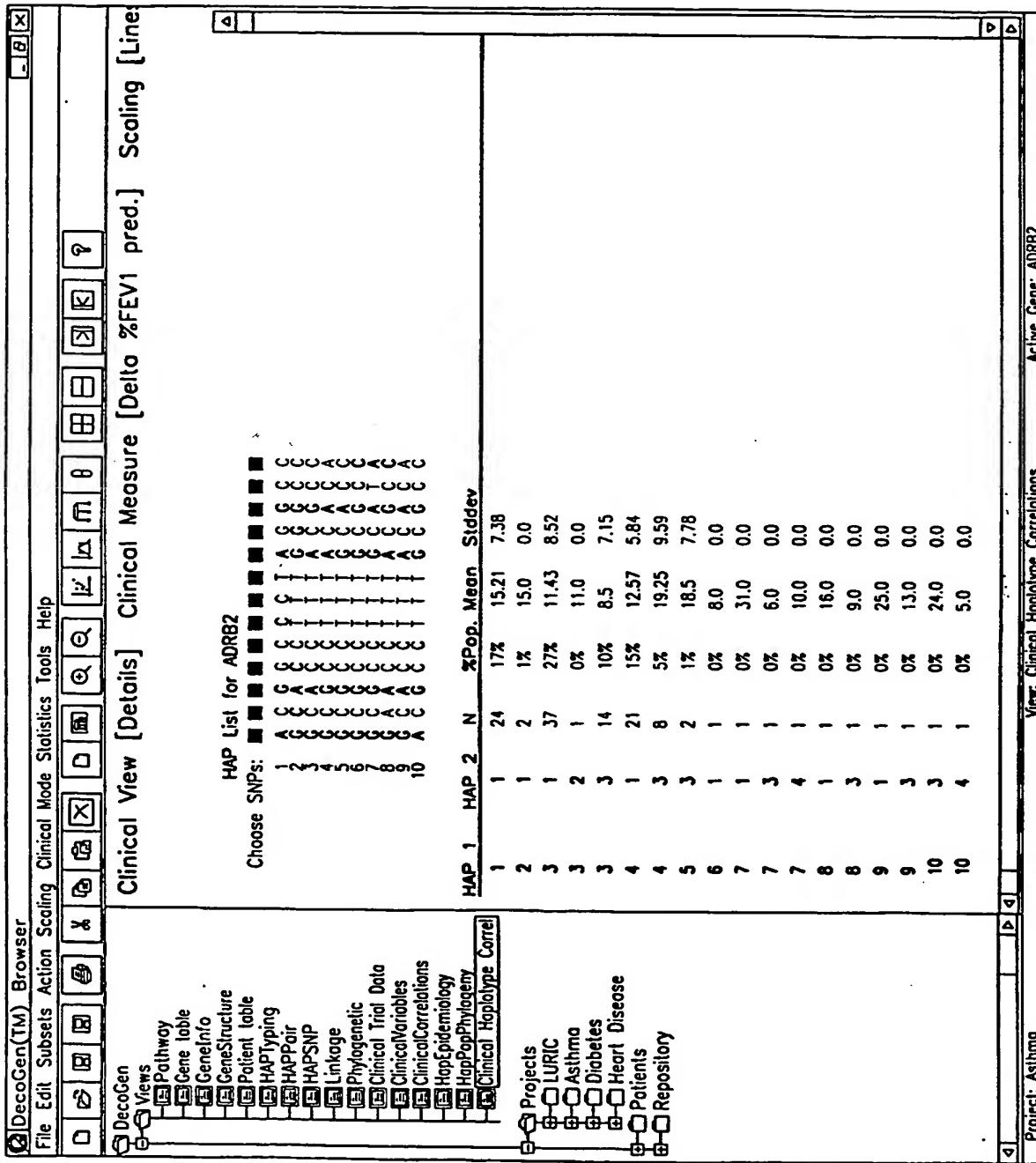


FIG. 39B

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FIG. 40



SUBSTITUTE SHEET (RULE 26)

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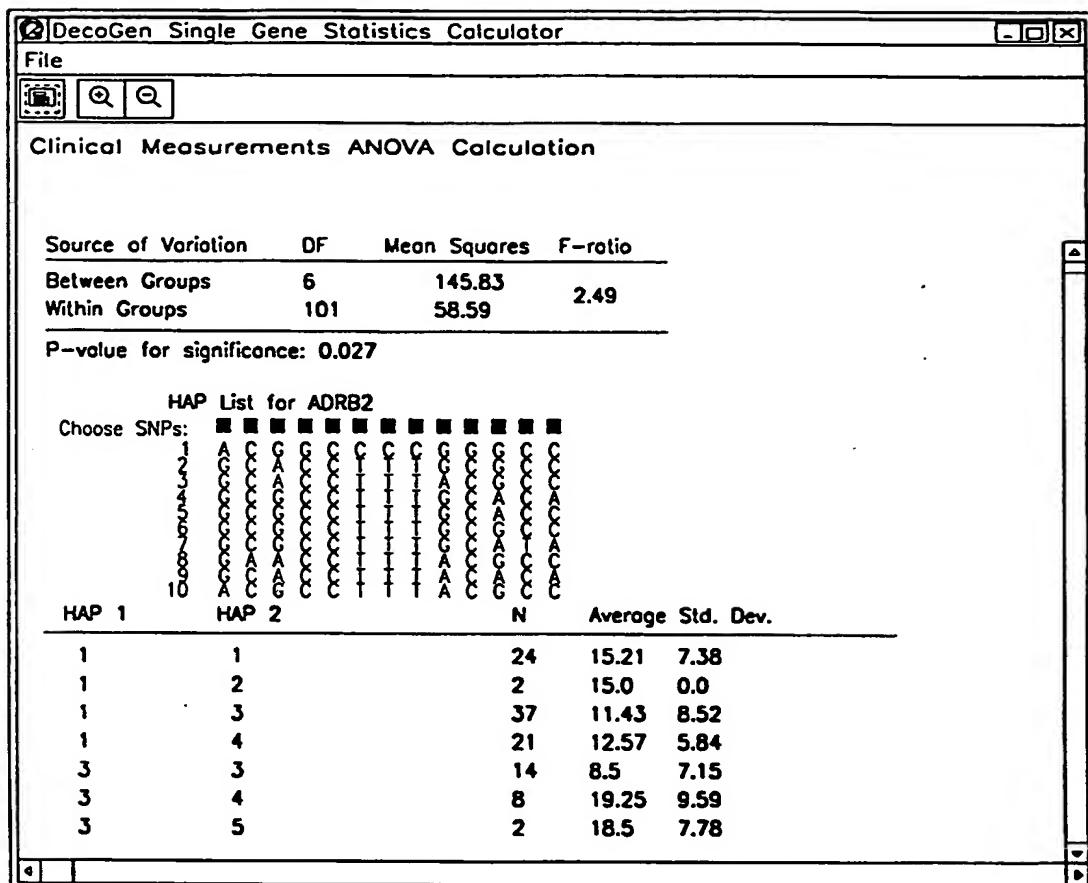
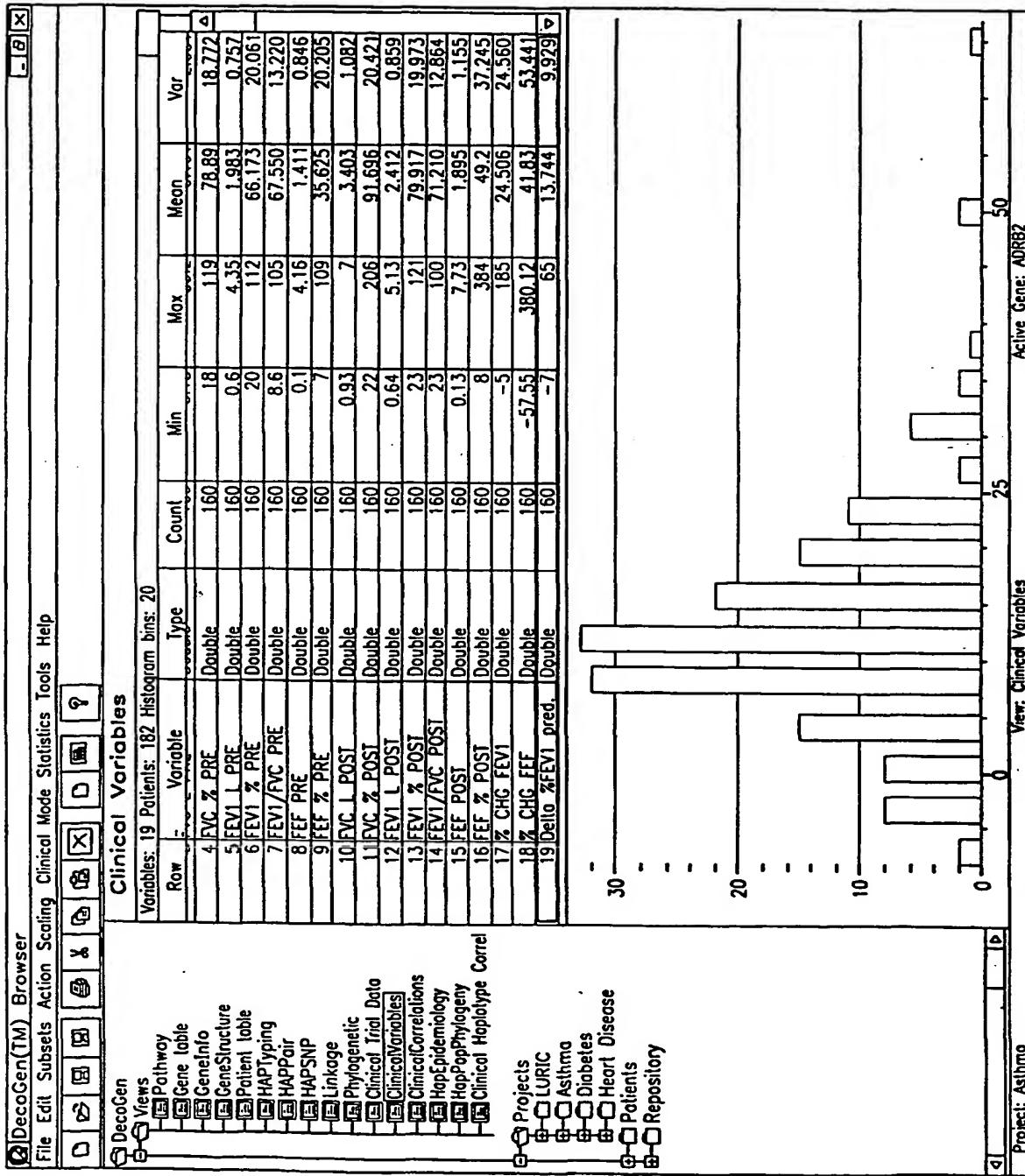


FIG. 4I

SUBSTITUTE SHEET (RULE 26)

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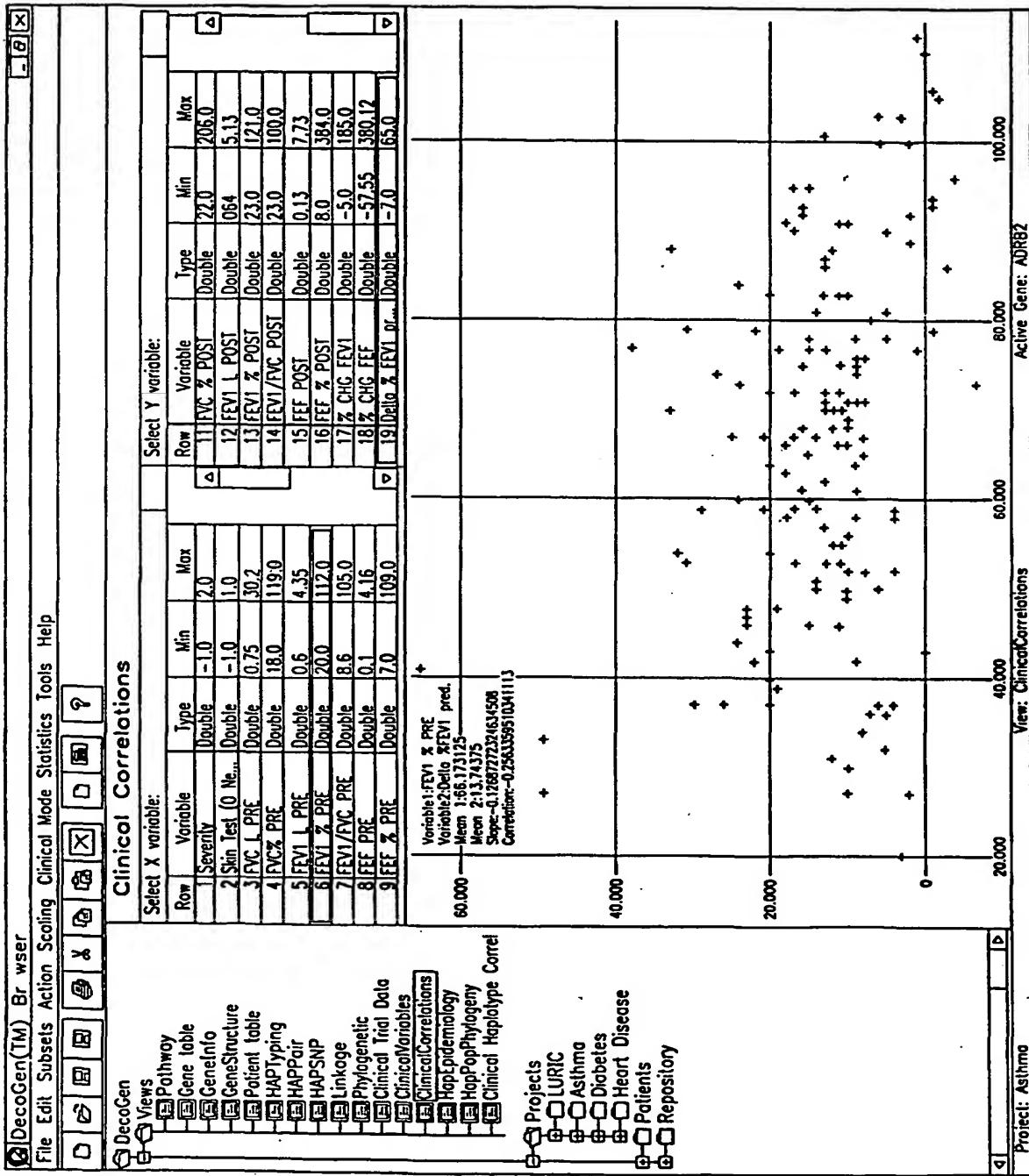
FIG. 42



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FIG. 43



SUBSTITUTE SHEET (RULE 26)

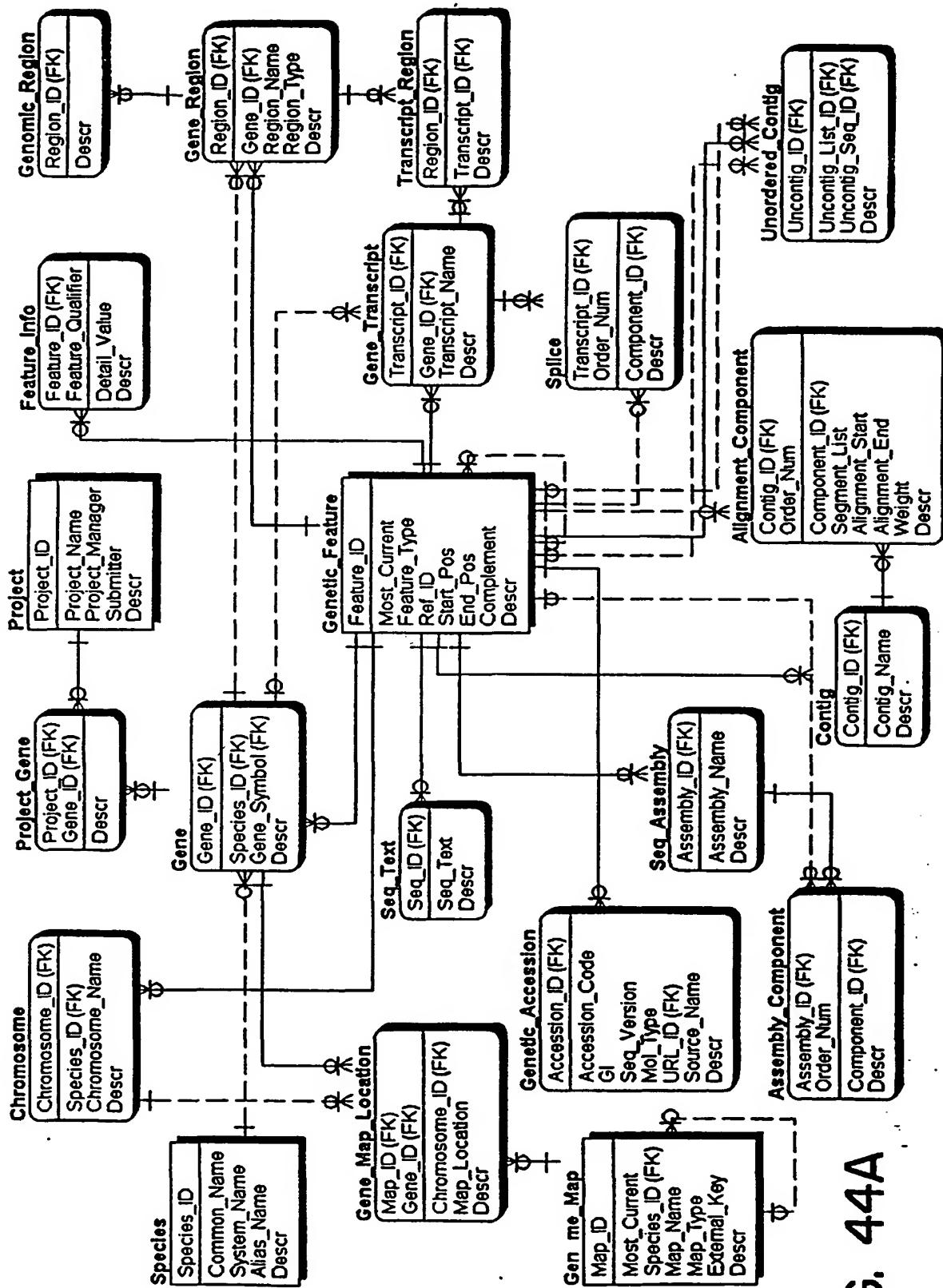


FIG. 44A

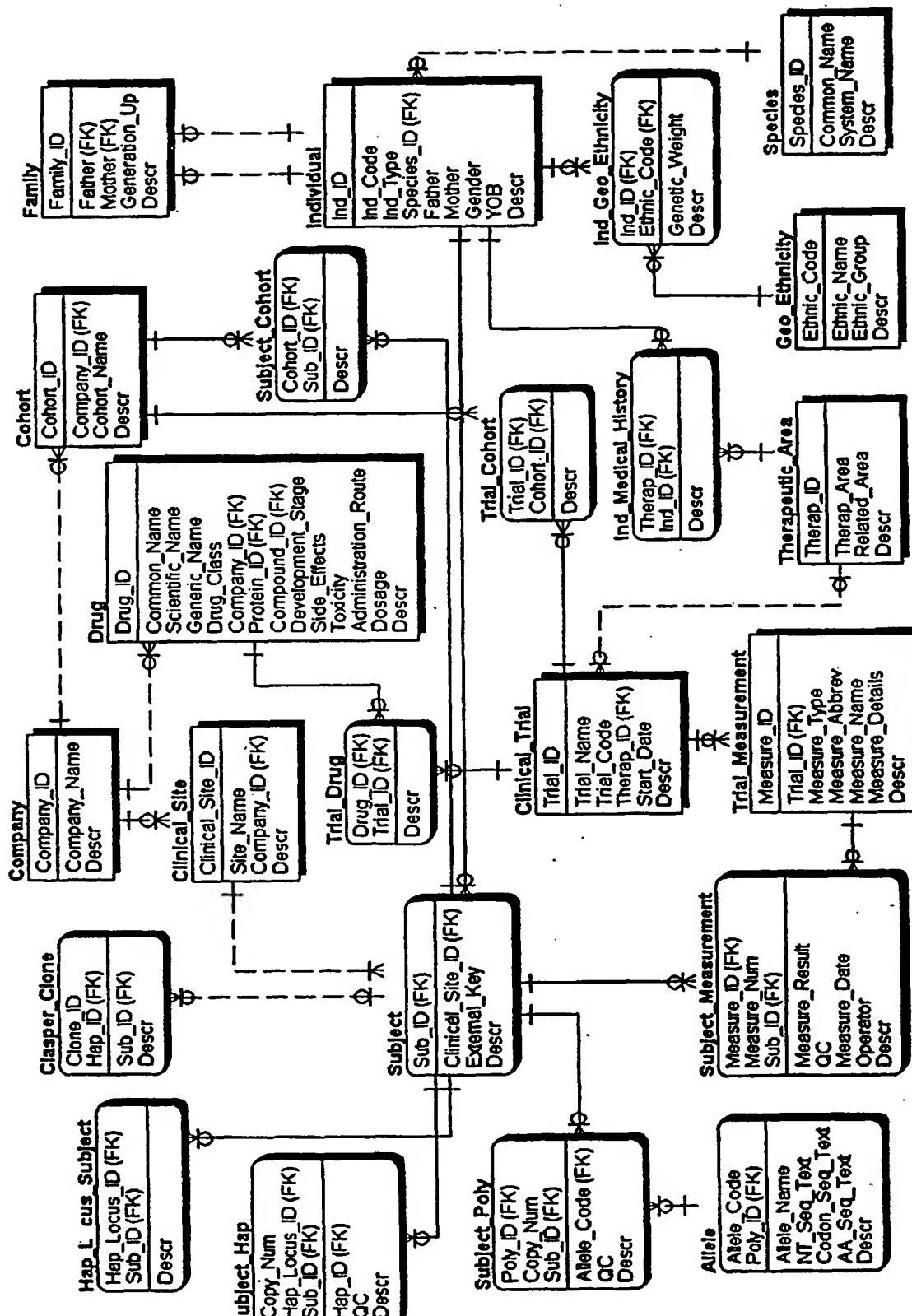


FIG. 44B

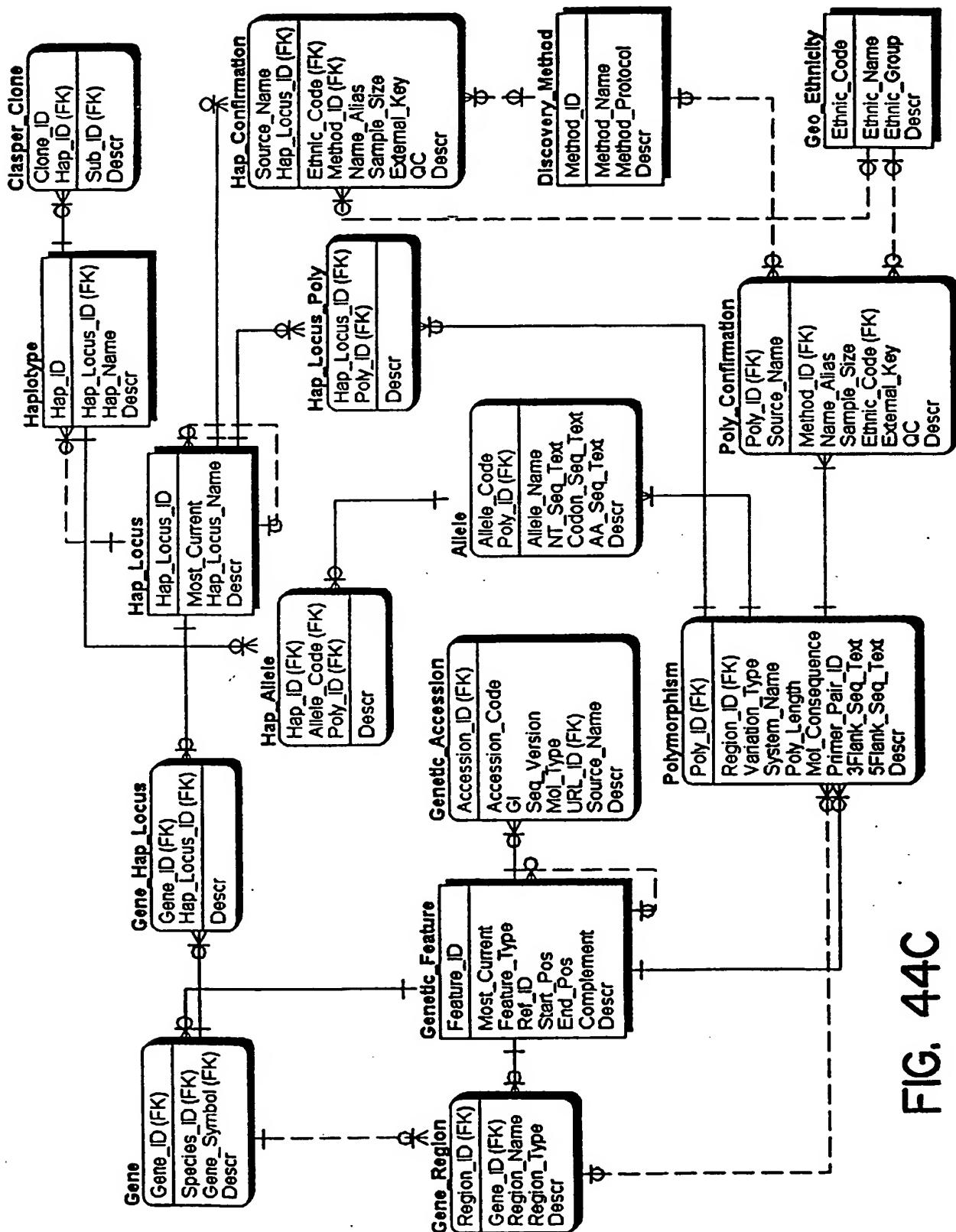


FIG. 44C

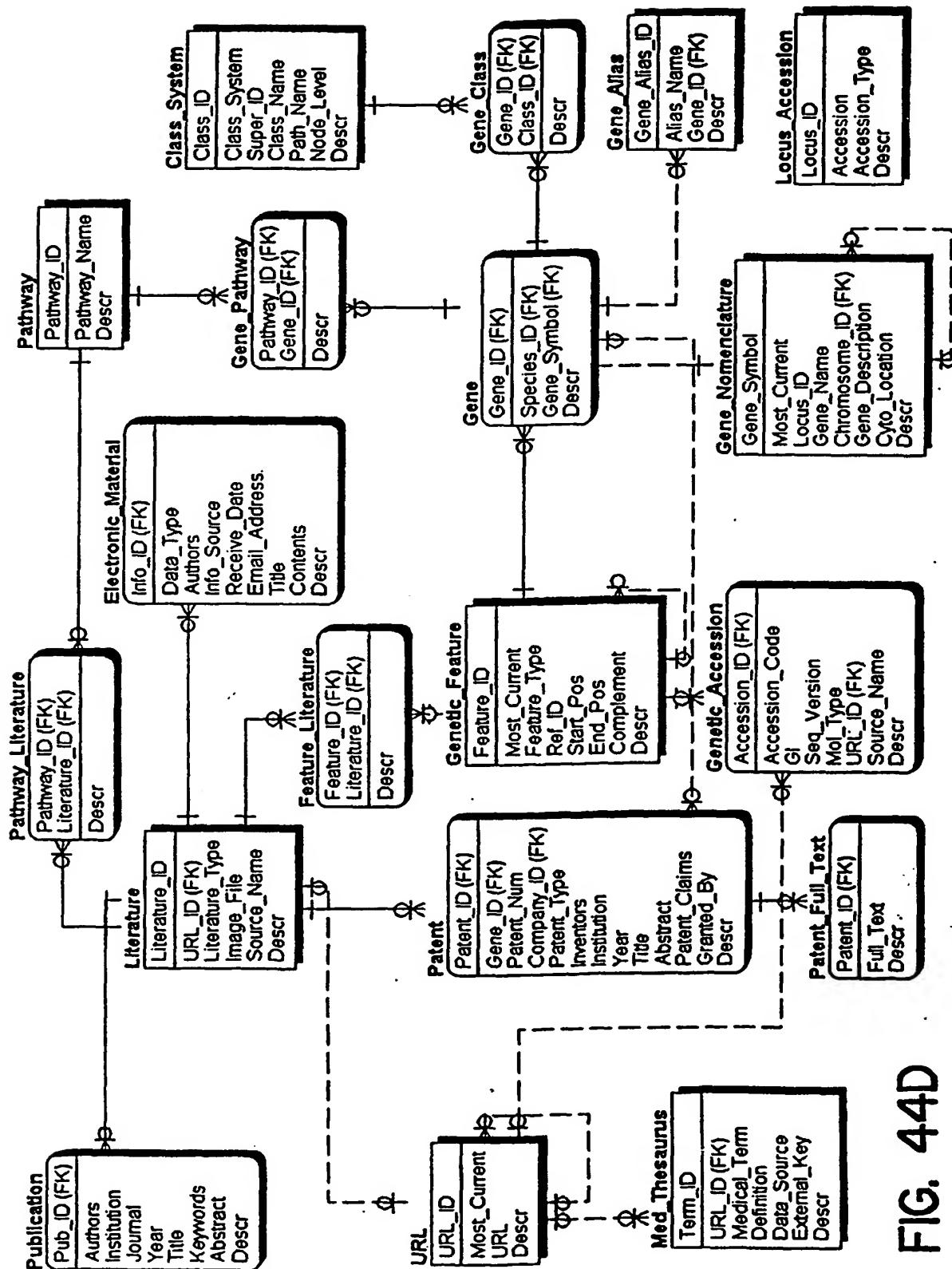


FIG. 44D

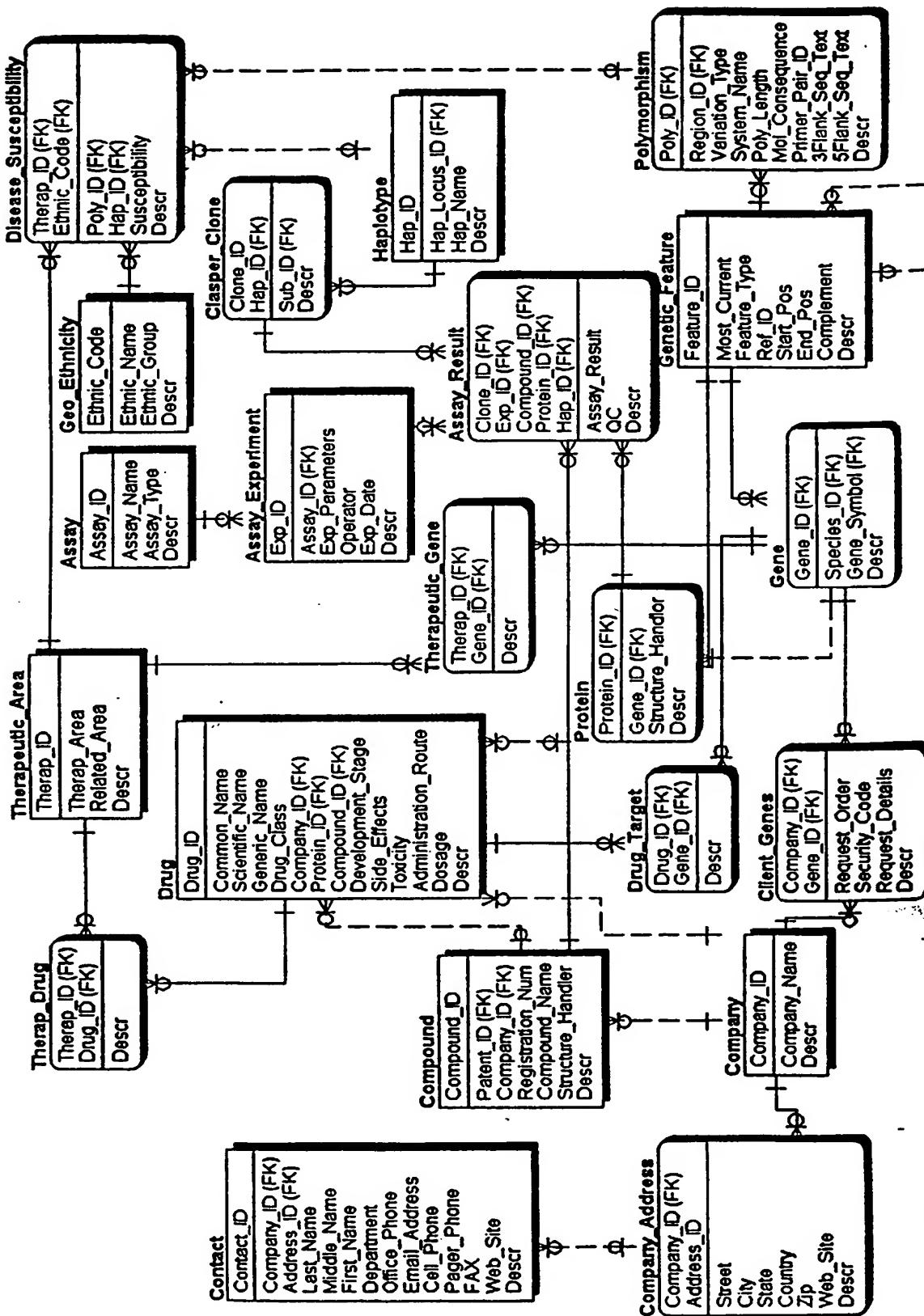
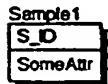


FIG. 44E

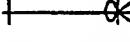
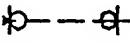
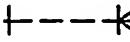
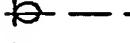
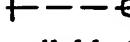
SUBSTITUTE SHEET (RULE 26)

*Legend of Figures:*

Rectangle Boxes: Tables in the database.



Rounded Boxes: Children tables that depend on their parent tables. This dependency requires that a parent record to be in existence before a child record can be created.

- 2:  Identifying parent / child relationship. It depicts the not nullable 1-to-0-or-many relationship.
- 4:  Non-identifying parent / child relationship. It represents the nullable 0-or-1-to-many relationship.
- 6:  Identifying parent / child relationship. It depicts the not nullable 1-to-1-or-many relationship.
- 8:  Non-identifying parent / child relationship. It represents the not nullable 1-to-1-or-many relationship.
- 10:  Identifying parent / child relationship. It depicts the not nullable 1-to-exact-1 relationship.
- 12:  Non-identifying parent / child relationship. It represents the nullable 0-or-1-to-exact-1 relationship.
- 14:  Non-identifying parent / child relationship. It represents the not nullable 0-or-1-to-many relationship.

**FIG. 44F**

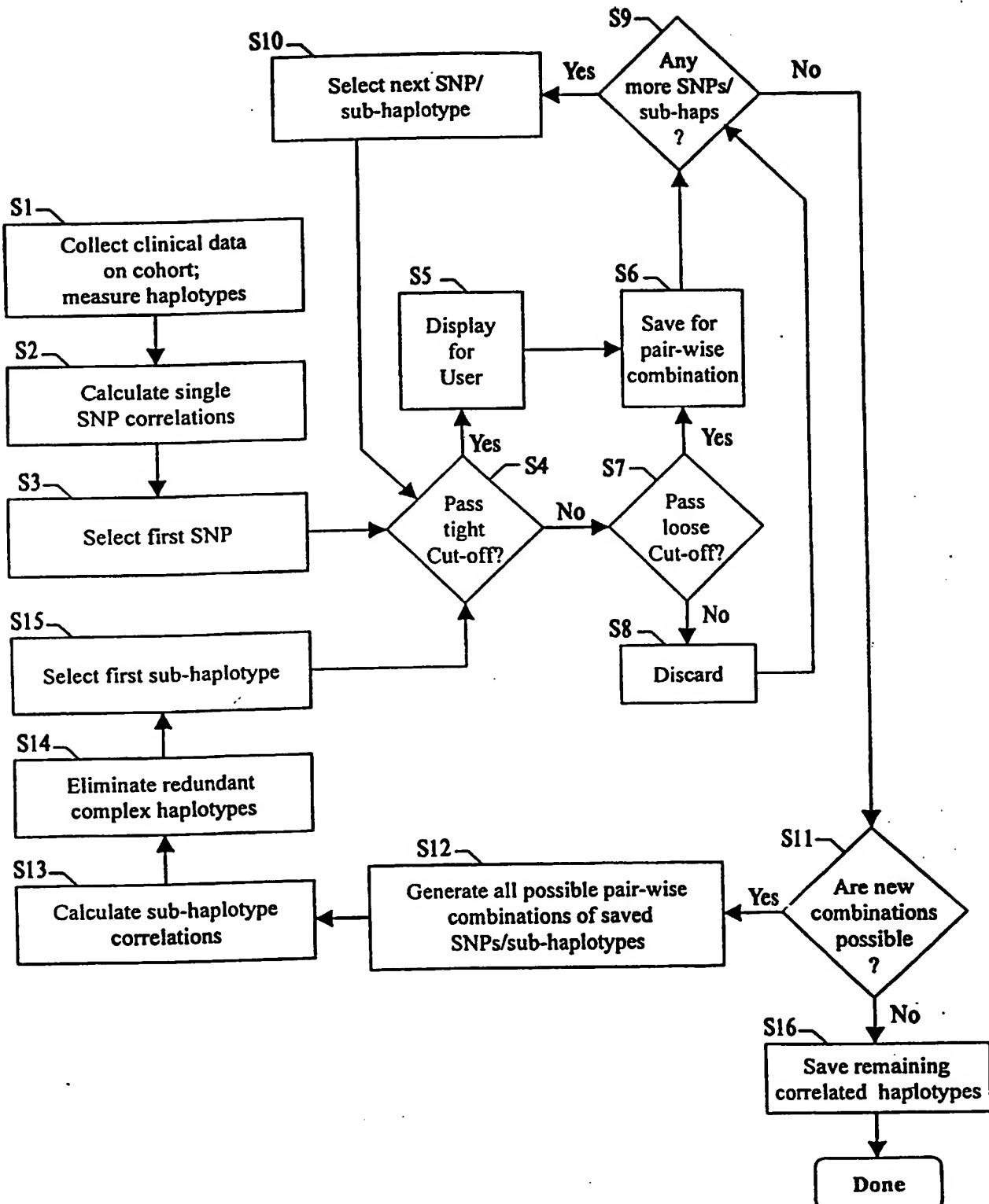


FIG. 45  
SUBSTITUTE SHEET (RULE 26)

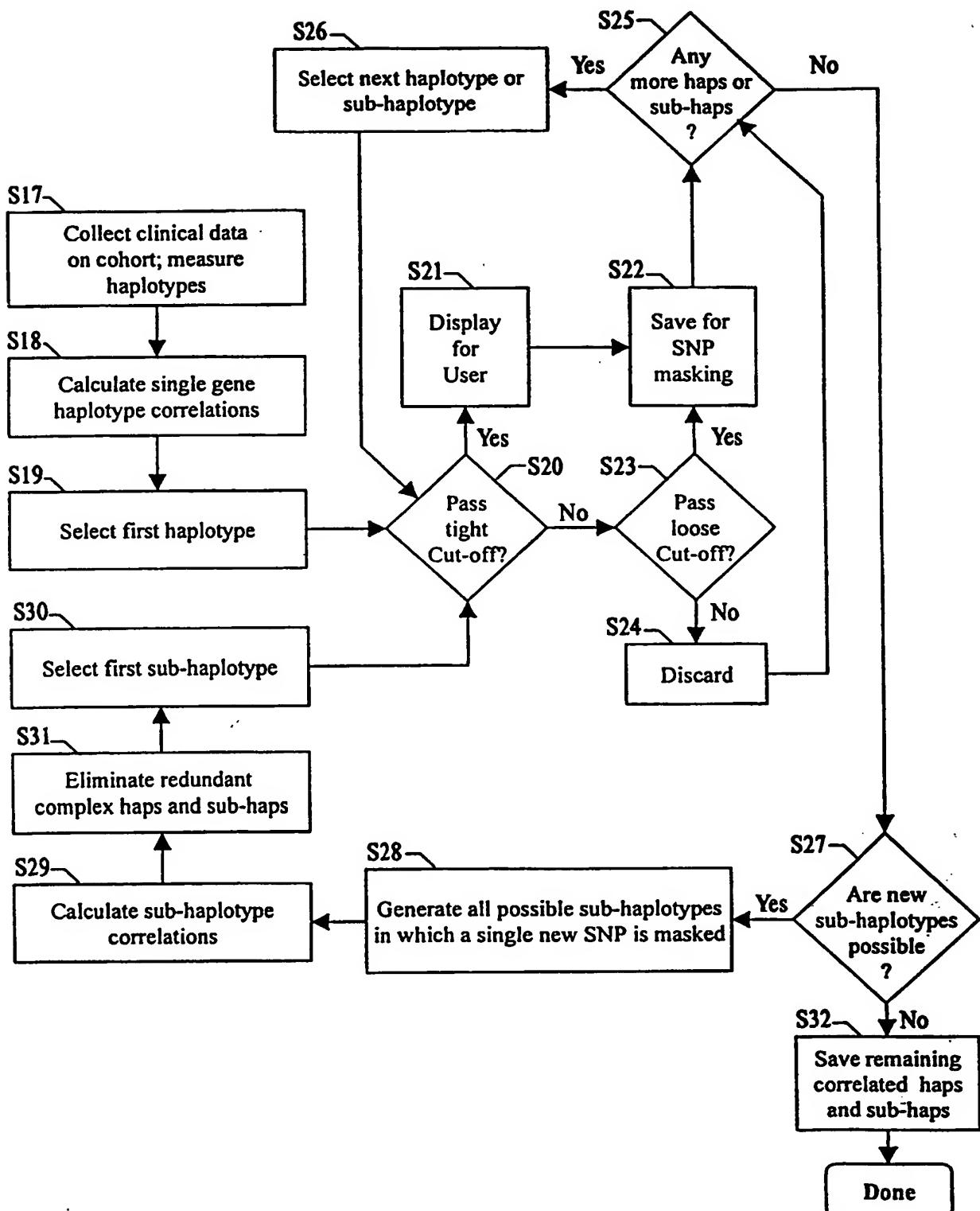


FIG. 46

SUBSTITUTE SHEET (RULE 26)

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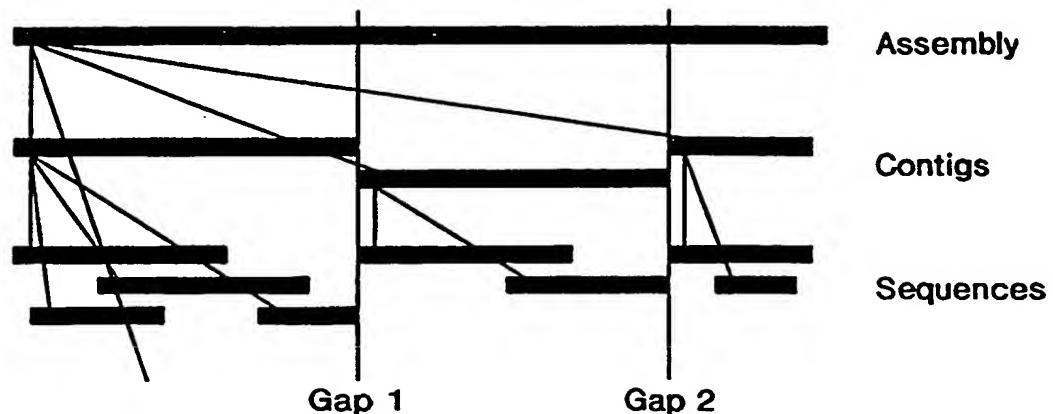


FIG. 47

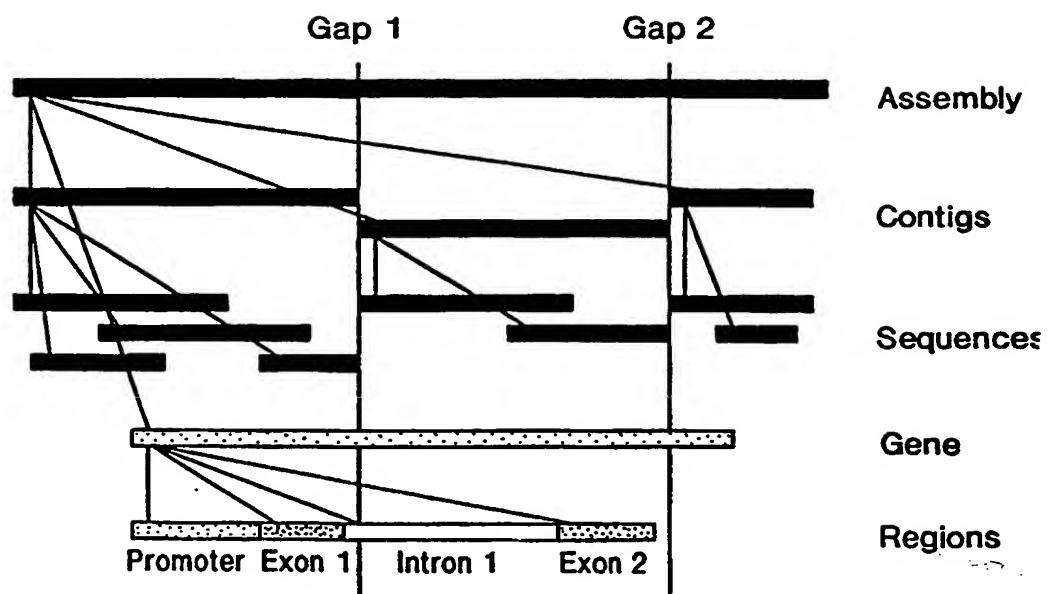


FIG. 48

SUBSTITUTE SHEET (RULE 26)

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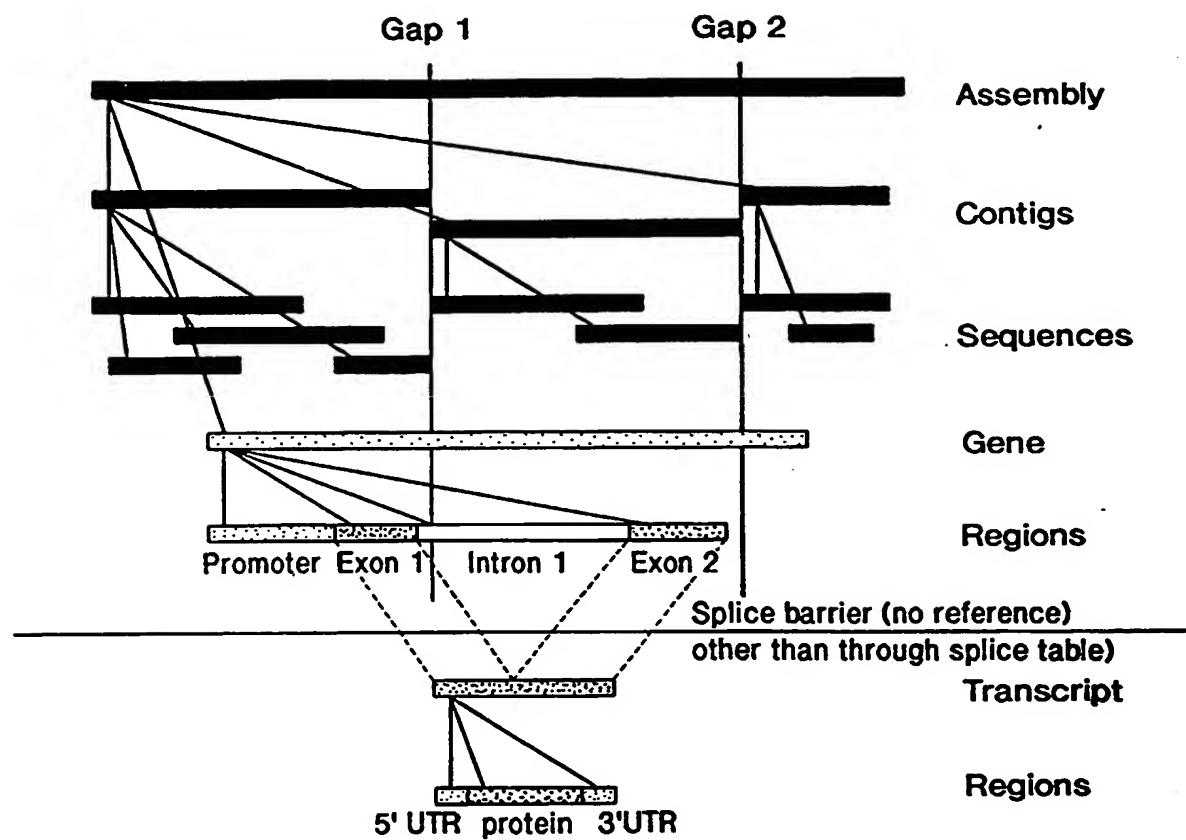


FIG. 49